Product information

January 2011

Mitsubishi Electric UK

FFR-HEL-(H)-E DC-choke

Herewith we would like to inform you about the new compact DC-choke generation FFR-HEL-(H)-E.

Our new flexible and compact DC-choke is available for all 700series Inverter (1/3~200/ 3~400V) from 0,4 to 55kW. Above 55kW you will find the MT-HEL DC-chokes included as standard in the box.

For quick and easy installation, all chokes have standardised body sizes and isolated screw clamps.

The advantage of the potted versions is a smaller size. Each type becomes one size smaller than air cooled chokes, because of the better heat dissipation caused by the polyurethane polyamide sealing.



Picture 1: 18.5kW, 400V type

Energy saving advantages:

- By using this DC-choke the Inverter complies with the EN 61000-3-12 Harmonic standard.
- Tests have shown that using a FFR-HEL-(H)-E DC-choke can reduce the energy consumption of the Mitsubishi Inverter by 34%.

The chokes have IP20 protection (400V: 0.4 to 37kW and 200V: 0.4 to 22kW; others have IP00) and they are produced according to UL- and RoHS-standard. Rated temperature is 50℃.

The FFR-HEL-(H)-E will be available from stock as standard product from January 2010.

Find below the FFR-HEL types including article numbers:

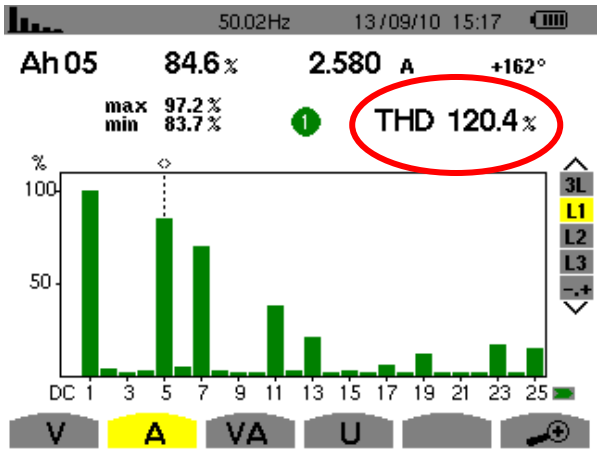
DC Link Choke 400V	
FFR-HEL-H0.4K-E	238342
FFR-HEL-H0.75K-E	238343
FFR-HEL-H1.5K-E	238344
FFR-HEL-H2.2K-E	238345
FFR-HEL-H3.7K-E	238346
FFR-HEL-H5.5K-E	238347
FFR-HEL-H7.5K-E	238348
FFR-HEL-H11K-E	238349
FFR-HEL-H15K-E	238350
FFR-HEL-H18.5K-E	238351
FFR-HEL-H22K-E	238352
FFR-HEL-H30K-E	238353
FFR-HEL-H37K-E	238354
FFR-HEL-H45K-E	238355
FFR-HEL-H55K-E	238356

DC Link Choke 200V	
FFR-HEL-0.4K-E	238357
FFR-HEL-0.75K-E	238358
FFR-HEL-1.5K-E	238359
FFR-HEL-2.2K-E	238360
FFR-HEL-3.7K-E	238361
FFR-HEL-5.5K-E	238362
FFR-HEL-7.5K-E	238363
FFR-HEL-11K-E	238364
FFR-HEL-15K-E	238365
FFR-HEL-18.5K-E	238366
FFR-HEL-22K-E	238367
FFR-HEL-30K-E	238368
FFR-HEL-37K-E	238369
FFR-HEL-45K-E	238370
FFR-HEL-55K-E	238371

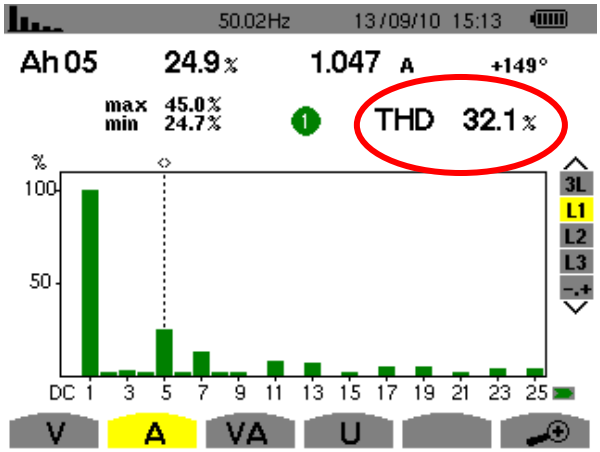
MITSUBISHI ELECTRIC
FACTORY AUTOMATION

Performance benefits by using our new DC-choke: (left without choke; right with choke)

Total harmonic distortion (THDI):

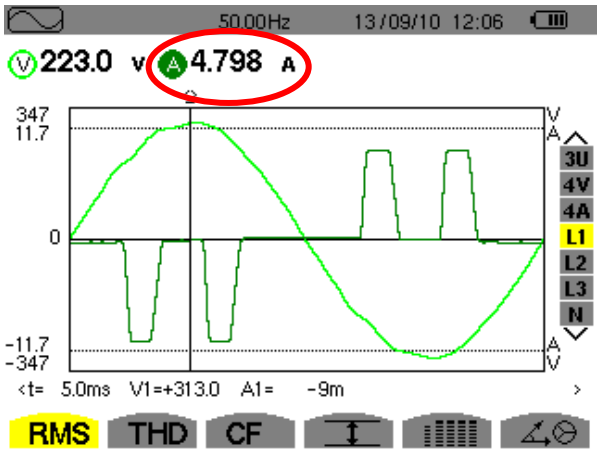


Picture 1: THDI without choke

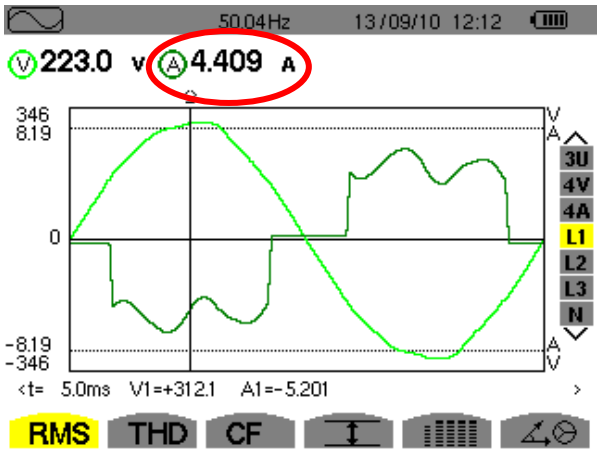


Picture 3: THDI with DC-choke

Input current wave form:



Picture 4: Input current without choke

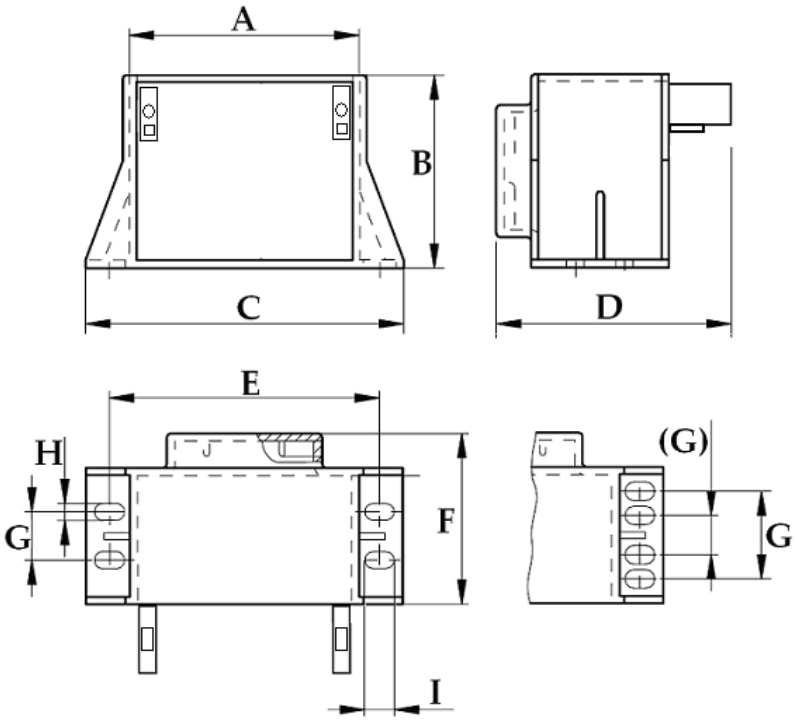


Picture 5: Input current with DC-choke

You can see the better harmonic performance and a smoothed DC-current wave form on a 2.2kW drive.

Dimensions:

Drowned types (IP20):

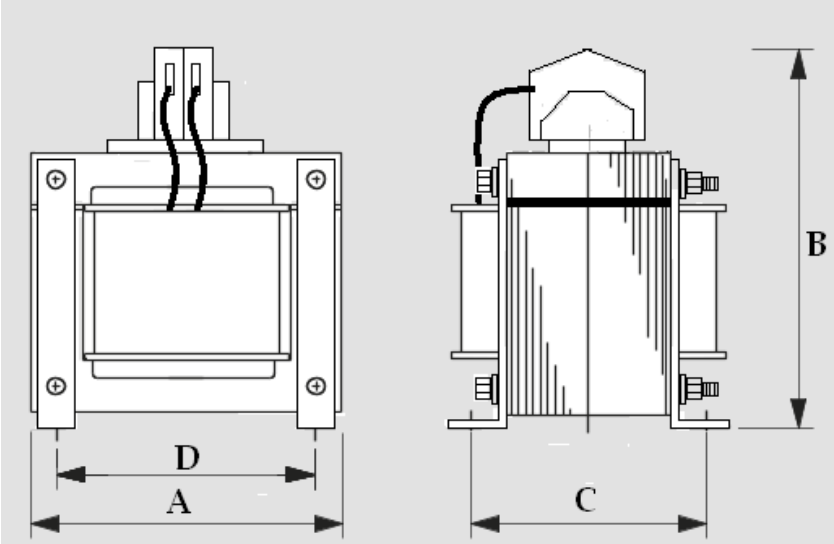


Picture 6: DC-choke, drowned type

Voltage type	DC-choke	A	B	C	D	E	F	G	H	I	Weight (kg)	Type of clamp
400V drowned	FFR-HEL-H0.4K-E	51	43	75	60	62	38,6	12	3,5	6,7	0,35	TK4
	FFR-HEL-H0.75K-E	63,5	53,5	88	70	75	48	13,5	5	9	0,6	TK4
	FFR-HEL-H1.5K-E	63,5	53,5	88	70	75	48	13,5	5	9	0,61	TK4
	FFR-HEL-H2.2K-E	82,5	71,5	112,5	81	97,5	59	32,5	5,2	10	1,2	TK4
	FFR-HEL-H3.7K-E	82,5	71,5	112,5	81	97,5	59	32,5	5,2	10	1,2	TK4
	FFR-HEL-H5.5K-E	89,2	74,7	120	85,5	102,5	63,8	32,5	5,5	10,2	1,5	TK4
	FFR-HEL-H7.5K-E	89,2	74,7	120	100	102,5	77,8	45	5,5	10,2	2,2	TK4
	FFR-HEL-H11K-E	101,5	85	133,2	112	115	84,6	50	5,5	10,2	3,1	TK10
	FFR-HEL-H15K-E	101,5	85	133,2	112	115	84,6	50	5,5	10,2	3	TK10
	FFR-HEL-H18.5K-E	101,5	85,2	133,2	128	115	98,5	64	5,5	10,2	4	RK16
	FFR-HEL-H22K-E	127	106,8	172	166	150	108,5	65	8,5	8,5	5,3	RK35
	FFR-HEL-H30K-E	127	106,8	172	166	150	108,5	65	8,5	8,5	5,5	RK35
	FFR-HEL-H37K-E	127	106,8	172	186	150	128,5	85	8,5	8,5	8	RK35

Voltage type	DC-choke	A	B	C	D	E	F	G	H	I	Weight (kg)	Type of clamp
200V drowned	FFR-HEL-0.4K-E	63,5	53,5	88	70	75	48	13,5	5	9	0,6	TK4
	FFR-HEL-0.75K-E	63,5	53,5	88	70	75	48	13,5	5	9	0,6	TK4
	FFR-HEL-1.5K-E	82,5	71,5	112,5	81	97,5	59	32,5	5,2	10	1,2	TK4
	FFR-HEL-2.2K-E	82,5	71,5	112,5	81	97,5	59	32,5	5,2	10	1,2	TK4
	FFR-HEL-3.7K-E	89,2	74,7	120	85,5	102,5	63,8	32,5	5,5	10,2	1,5	TK4
	FFR-HEL-5.5K-E	101,5	85	133,2	112	115	84,6	50	5,5	10,2	3,1	TK10
	FFR-HEL-7.5K-E	101,5	85	133,2	112	115	84,6	50	5,5	10,2	3,1	RK16
	FFR-HEL-11K-E	101,5	85	133,2	102	115	84,6	50	5,5	10,2	3,1	RK16
	FFR-HEL-15K-E	101,5	85,2	133,2	156	115	98,5	64	5,5	10,2	4	RK35
	FFR-HEL-18.5K-E	101,5	85,2	133,2	163	115	98,5	64	5,5	10,2	4	RK50
	FFR-HEL-22K-E	127	106,8	172	144	150	108,5	65	8,5	8,5	5,5	RK50

Open types (IP00):



Picture 7: DC-choke, open type

Voltage type	DC-choke	A	B	C	D	Weight (kg)	Type of clamp
400V open	FFR-HEL-H45K-E	150	202	114	125	11,3	RK50
	FFR-HEL-H55K-E	150	212	134	125	14,4	RK95

Voltage type	DC-choke	A	B	C	D	Weight (kg)	Type of clamp
200V open	FFR-HEL-30K-E	150	237	94	125	8,2	RK95
	FFR-HEL-37K-E	150	237	114	125	10,7	RK95
	FFR-HEL-45K-E	150	237	114	125	10,7	RK95
	FFR-HEL-55K-E	150	237	134	125	14,4	RK95

