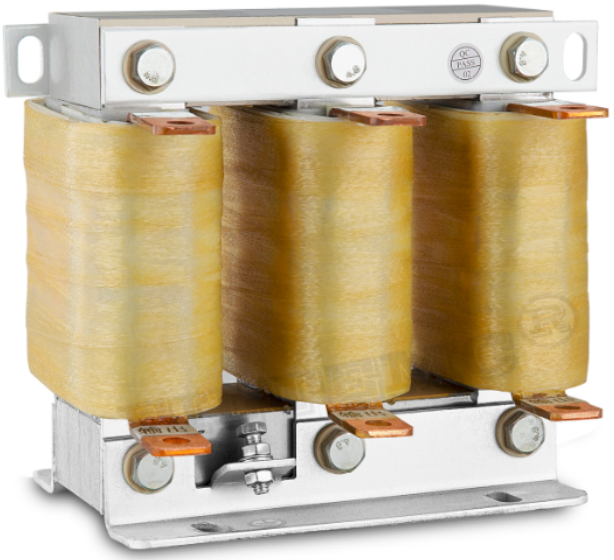
filtemc

Inverter Output Reactor

FT33TDK1 Series

Introduction



- To restrict the dv/dt to 500V/us.
- To restrict the over voltage of motor terminals: 1000V to 400V(rms value),1150V to 460V(rms value).
- Filter interference caused by the start of contactor between filter and motor.

Features and Benefits

- To restrict the capacitive charging current of the cable connecting inverter and motor.
- Deactivate the voltage rising rate of inverter output PWM wave.
- Compensate capacitor charging current in case of long cable.
- Reduce leakage current of motor grounding.

Standards

- IEC289: 1987 Reactor
- GB10229-88 Reactor(eqv IEC289:1987)
- JB9644-1999: Reactor for Semiconductor Electric Drive

Working Conditions

- Ambient temperature: -40℃ ~ +45℃ no decreasing of the rated value, highest temp. +55℃ ; if above 45℃ , the rated current decreases 2% with the temperature increases 1℃ .
- Working place not higher than 2000 meters above the sea level.
- Operation temperature: -25℃ ~+45℃ , relative humidity ≤ 90%.
- No harmful gas, no flammable or explosive articles.
- With good ventilation, if installed in cabinet, please add ventilating equipment.

Technical Data

Rated Voltage: VR	Φ3/380VAC~1140VAC
Operating Frequency: FR	50/60Hz
Rated Current: IR	3A~1600A
Max. Current	1.5×rated current, lasts for 60s
Protection Class	IP00~IP22
Carrier Frequency	2~6KHz
Insulation Class	class F, H
Insulation Resistance	≥ 100MΩ@1000VDC
Voltage Drop	<4%, torque loss may be caused if higher than 4%
Noise	≤ 65dB
Temperature Rise	≤ 85K
Dielectric Strength	3000VAC/50Hz/5mA/10S no breakdown of the core windings(factory test)

Outline Drawing and Dimensions(mm)

Part No.	Outline Drawing	Power(KW)	Current(A)	Insulation Class	Voltage Drop
FT33TDK1-10-A	Fig.1	3.7	10	F	1%
FT33TDK1-15-A	Fig.1	5.5	15	F	1%
FT33TDK1-20-A	Fig.2	7.5	20	F	1%
FT33TDK1-30-A	Fig.2	11	30	F	1%
FT33TDK1-40-A	Fig.3	15	40	F	1%
FT33TDK1-50-A	Fig.3	18.5	50	F	1%
FT33TDK1-60-A	Fig.3	22	60	F	1%
FT33TDK1-80-A	Fig.4	30	80	F	1%
FT33TDK1-90-A	Fig.4	37	90	F	1%
FT33TDK1-120-A	Fig.4	45	120	F	1%
FT33TDK1-150-A	Fig.4	55	150	F	1%
FT33TDK1-200-A	Fig.4	75	200	F	1%

Part No.	Outline Drawing	Power(KW)	Current(A)	Insulation Class	Voltage Drop
FT33TDK1-250-A	Fig.4	110	250	F	1%
FT33TDK1-300-A	Fig.4	132	300	F	1%
FT33TDK1-330-A	Fig.4	160	330	F	1%
FT33TDK1-390-A	Fig.4	185	390	F	1%
FT33TDK1-490-A	Fig.4	220	490	F	1%
FT33TDK1-600-A	Fig.4	280	600	F	1%
FT33TDK1-660-A	Fig.4	300	660	F	1%
FT33TDK1-800-A	Fig.4	380	800	F	1%
FT33TDK1-10-C	Fig.1	3.7	10	F	1%
FT33TDK1-15-C	Fig.1	5.5	15	F	1%
FT33TDK1-20-C	Fig.1	7.5	20	F	1%
FT33TDK1-30-C	Fig.2	11	30	F	1%
FT33TDK1-40-C	Fig.2	15	40	F	1%

Part No.	Outline Drawing	Power(KW)	Current(A)	Insulation Class	Voltage Drop
FT33TDK1-50-C	Fig.2	18.5	50	F	1%
FT33TDK1-60-C	Fig.2	22	60	F	1%
FT33TDK1-80-C	Fig.2	30	80	F	1%
FT33TDK1-90-C	Fig.4	37	90	F	1%
FT33TDK1-120-C	Fig.4	45	120	F	1%
FT33TDK1-150-C	Fig.4	55	150	F	1%
FT33TDK1-200-C	Fig.4	75	200	F	1%
FT33TDK1-250-C	Fig.4	110	250	F	1%
FT33TDK1-300-C	Fig.4	132	300	F	1%
FT33TDK1-330-C	Fig.4	160	330	F	1%
FT33TDK1-390-C	Fig.4	185	390	F	1%
FT33TDK1-490-C	Fig.4	220	490	F	1%
FT33TDK1-600-C	Fig.4	280	600	F	1%

Part No.	Outline Drawing	Power(KW)	Current(A)	Insulation Class	Voltage Drop
FT33TDK1-660-C	Fig.4	300	660	F	1%
FT33TDK1-800-C	Fig.4	380	800	F	1%
FT33TDK1-1000-C	Fig.4	450	1000	F	1%
FT33TDK1-1200-C	Fig.4	550	1200	F	1%
FT33TDK1-1600-C	Fig.4	630	1600	F	1%

Outline Drawing and Dimensions(mm)

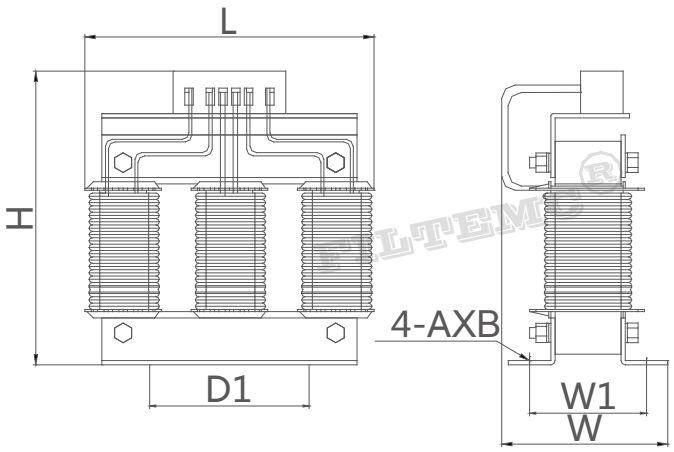


Fig.1

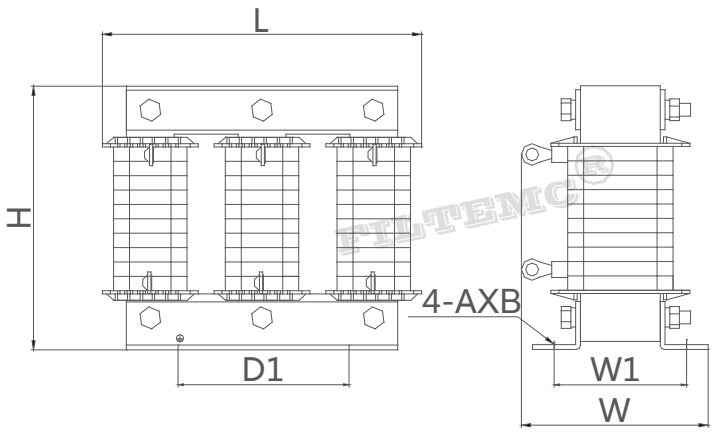


Fig.2

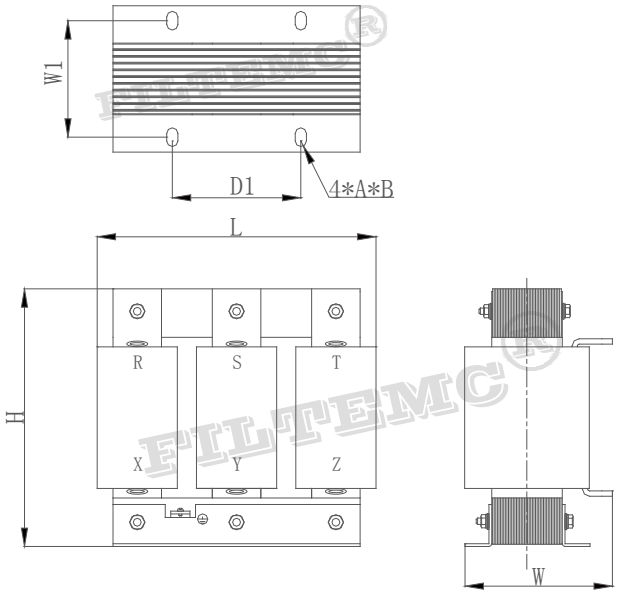


Fig.3

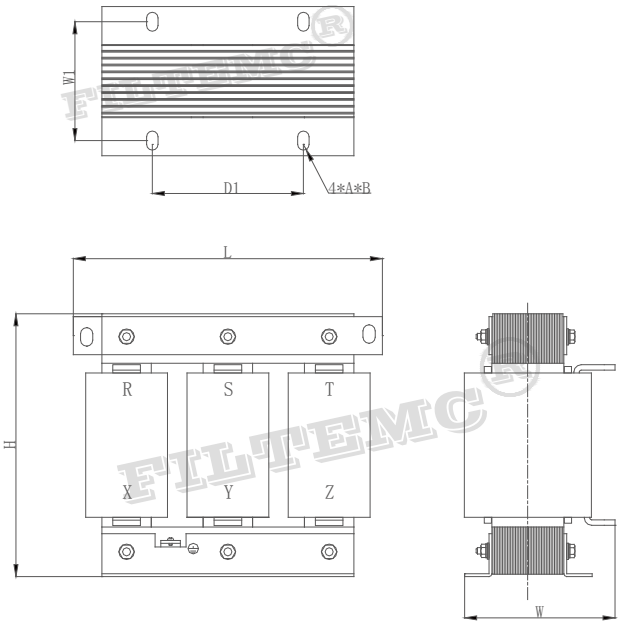


Fig.4

Part No.	Outline Drawing	Dimensions(mm)						
		L(max)	W(max)	H(max)	D1±2	D2±2	W1±2	A x B
FT33TDK1-10-A	Fig.1	145	80	140	75	/	57	6.5x11
FT33TDK1-15-A	Fig.1	145	80	140	75	/	57	6.5x11
FT33TDK1-20-A	Fig.2	170	120	140	80	/	65	6.5x11
FT33TDK1-30-A	Fig.2	170	120	140	80	/	65	6.5x11

Part No.	Outline Drawing	Dimensions(mm)						
		L(max)	W(max)	H(max)	D1±2	D2±2	W1±2	A x B
FT33TDK1-40-A	Fig.3	180	120	165	110	/	73	8x15
FT33TDK1-50-A	Fig.3	180	120	165	110	/	73	8x15
FT33TDK1-60-A	Fig.3	180	120	165	110	/	73	8x15
FT33TDK1-80-A	Fig.4	210	130	175	110	/	92	8x18
FT33TDK1-90-A	Fig.4	210	135	175	110	/	97	8x18
FT33TDK1-120-A	Fig.4	210	145	177	110	/	97	8x18
FT33TDK1-150-A	Fig.4	245	175	215	130	/	105	11x24
FT33TDK1-200-A	Fig.4	245	175	220	130	/	105	11x24
FT33TDK1-250-A	Fig.4	250	180	225	130	/	105	11x24
FT33TDK1-300-A	Fig.4	250	190	225	130	/	113	11x24
FT33TDK1-330-A	Fig.4	285	190	250	170	/	115	11x24
FT33TDK1-390-A	Fig.4	340	210	300	195	/	125	11x24
FT33TDK1-490-A	Fig.4	340	195	300	195	/	125	11x24

Part No.	Outline Drawing	Dimensions(mm)						
		L(max)	W(max)	H(max)	D1±2	D2±2	W1±2	A x B
FT33TDK1-600-A	Fig.4	340	195	300	195	/	125	11x24
FT33TDK1-660-A	Fig.4	340	195	300	195	/	125	11x24
FT33TDK1-800-A	Fig.4	340	215	300	195	/	145	11x24
FT33TDK1-1000-A	Fig.4	375	290	370	200	/	164	11x24
FT33TDK1-10-C	Fig.1	145	80	140	75	/	57	6.5x11
FT33TDK1-15-C	Fig.1	145	80	140	75	/	57	6.5x11
FT33TDK1-20-C	Fig.1	150	80	140	75	/	57	6.5x11
FT33TDK1-30-C	Fig.2	170	120	140	80	/	65	6.5x11
FT33TDK1-40-C	Fig.2	170	120	140	80	/	65	6.5x11
FT33TDK1-50-C	Fig.2	170	120	140	80	/	65	6.5x11
FT33TDK1-60-C	Fig.2	170	125	140	80	/	65	6.5x11
FT33TDK1-80-C	Fig.2	210	145	175	110	/	97	8x18
FT33TDK1-90-C	Fig.4	210	145	175	110	/	97	8x18
FT33TDK1-120-C	Fig.4	210	145	177	110	/	97	8x18

Part No.	Outline Drawing	Dimensions(mm)						
		L(max)	W(max)	H(max)	D1±2	D2±2	W1±2	A x B
FT33TDK1-150-C	Fig.4	210	150	175	110	/	97	8x18
FT33TDK1-200-C	Fig.4	245	180	220	130	/	118	11x24
FT33TDK1-250-C	Fig.4	245	180	220	130	/	118	11x24
FT33TDK1-300-C	Fig.4	250	185	220	130	/	120	11x24
FT33TDK1-330-C	Fig.4	280	220	240	130	/	135	11x24
FT33TDK1-390-C	Fig.4	280	220	240	130	/	135	11x24
FT33TDK1-490-C	Fig.4	280	220	240	130	/	135	11x24
FT33TDK1-600-C	Fig.4	280	220	280	130	/	135	11x24
FT33TDK1-660-C	Fig.4	320	240	285	170	/	135	12x20
FT33TDK1-800-C	Fig.4	355	290	335	200	/	165	14x24
FT33TDK1-1000-C	Fig.4	355	290	335	200	/	165	14x24
FT33TDK1-1200-C	Fig.4	355	295	340	200	/	165	14x24
FT33TDK1-1600-C	Fig.4	385	275	370	230	/	150	11x24

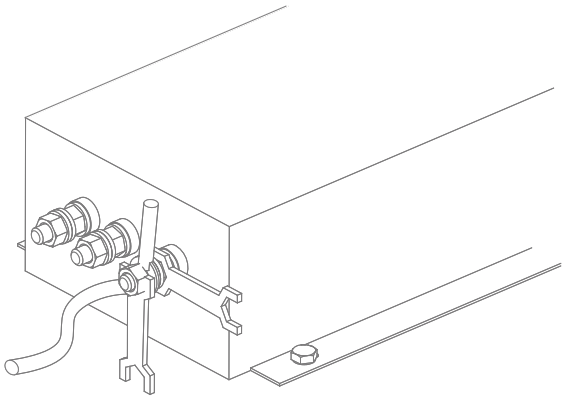
Important Notes on EMI Filter Application

1. Storage of EMI Filters:

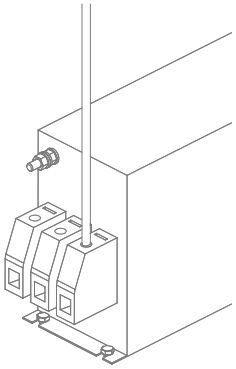
EMI filters mustn't be left out in the heat of the sun or exposed to the rain, it should be stored in warehouse with good ventilation, surrounding temperature between -30℃ and +65 ℃, the highest relative air humidity lower than 90%, and no corrosive liquid or gas.

2. Installation of EMI Filters:

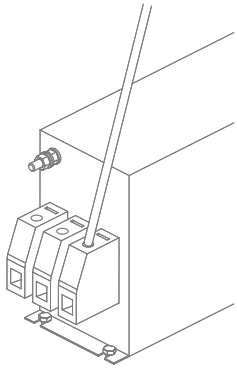
- EMI filters should be installed at power input, and the line inside the chassis be as short as possible to reduce radiated interference.
- Both input and output lines of EMI filters neither be intersected nor be tied up by string.
- Make sure the mounting flange fully grounded, and keep the ground cable as short as possible if filters are connected to other equipment.
- If the terminal is stud, please use two spanners to fasten the screw nut when connecting to avoid stud rotating and thus causing changes to the internal circuit and consequently leading to filters arcing, short circuit, broken down or the filtering effect worsened. First use spanner1 to fix the screw nut near the metal case, then use spanner2 to tighten the screw nut in front(shown as Figure1), otherwise the terminals may be damaged. Apply the same for the connection of other phases.
- Keep the tools fastening the stud be vertical to the metal case of filter when installing terminal block filters (shown as Figure2), must not tilt(shown as Figure3), otherwise the terminal blocks may be damaged.



(Figure1)



(Figure2)



(Figure3)

3. Reminding and Warning :

Please read all the safety warnings and instructions before installing filters and putting them into use:

• Don't take terminals as supporting point when moving filters to avoid the terminals distortion, loosening or broken.

• The protective earth connections shall be the first to be made when the EMC filter is installed and the last to be disconnected.

• Filters generate leakage current, please make sure they are well grounded before putting into operation.

• If the rated current is higher than 50A, we recommend grounding by the earth terminals but not only through the metal case of filters.

• Danger of electric shock: EMC filters contain components that store an electric charge. Dangerous voltages can continue to exist at the filter terminals for longer than five minutes even after the power has been switched off.

• The working conditions of EMI filter should comply with the technical parameters stated on the label, over voltage or overload could cause damage to filters. It is suggested to take proper over current protection measures.

• Current drop occurs when the surrounding temperature rises, fail to follow the current drop requirement may lead to impermissible exceeding of the component temperature, as a result the service life of filters will be shortened after long time running.

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