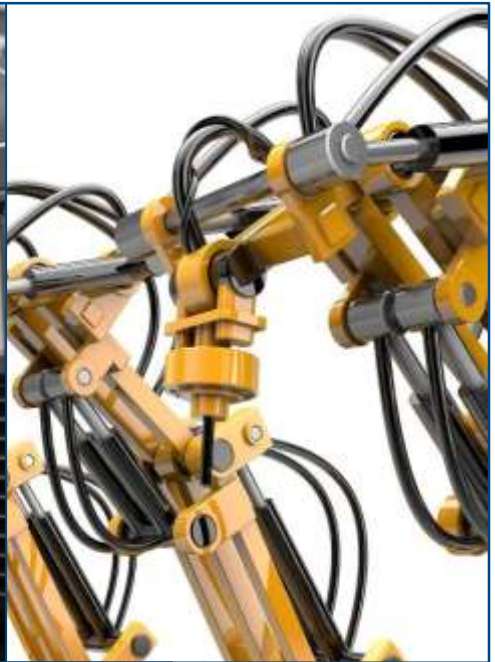




EMC Filter Applications

KEMET EMC Solutions

Competency in components and testing



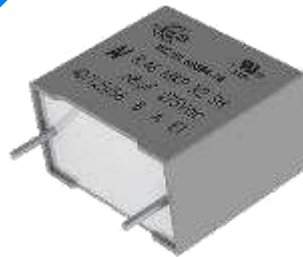
EMC Filters



EMC Testing



Customized



EMI Caps

KEMET EMC Capabilities

25 Years Experience



KEMET Sweden

- R&D
- Pre-Production Runs
- Accreditation for Common EN standards
- Semi-anechoic test chamber: 10 x 5 x 5m
- Open Area Test Site: 18 x 10 x 5m.
- Capabilities for Emission and Immunity measurements

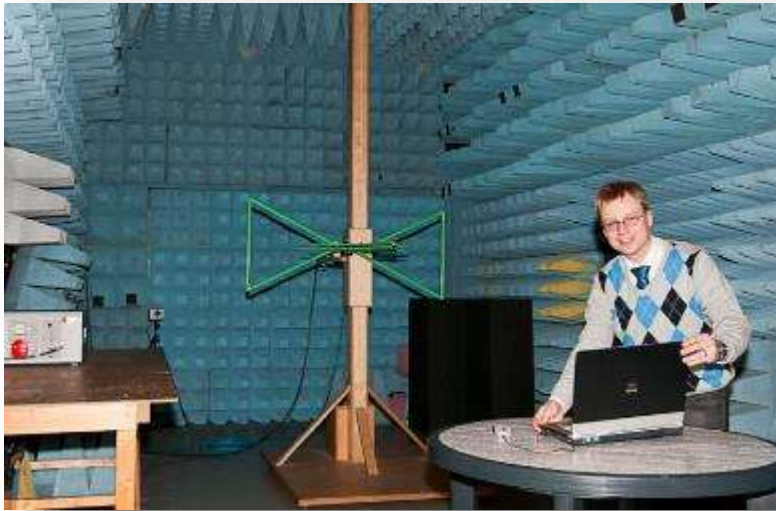
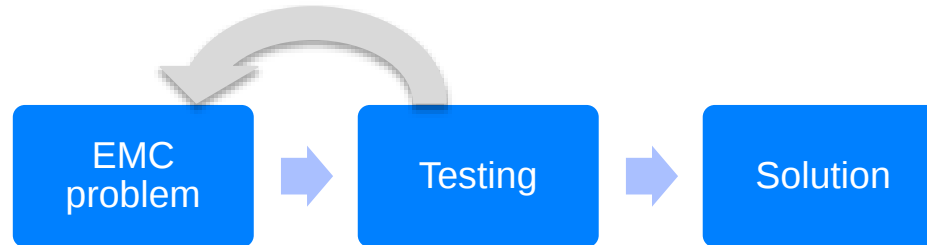
Skopje Macedonia

- Production



KEMET EMC Testing Services

Accredited EMC Test lab in Färjestaden, Sweden



- Accreditation for common EN standards.
- Semi-anechoic test chamber
 - 10 x 5 x 5 m
- Open Area Test Site
 - 18 x 10 x 5 m
- Capabilities for Emission and Immunity measurements

Solutions for standard or customized filters

EMC Filters

EMC Filters

Focus Market segments

**Process
Automation**



**Motor and Power
Drives**



**Renewable
Energy**



**Machine
Tools**



**Medical
Equipment**



Transportation

EMC Filters

Product Portfolio

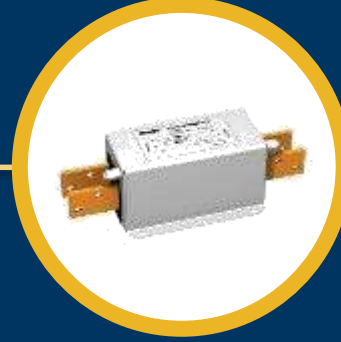
Feed-Through



PCB



DC



Three Phase



Single Phase

Typical Applications

Motor Drives

Single and Three Phase Filters

- Motor drives
- Servo drives
- Inverters



	Series	Function	Rated Voltage	Irms	Agency Approvals	Max Operating Temp	Schurter	Schaffner	TDK
Single Phase	FLLE2 AN	EMI	250Vac	8 -63 A	No	85°C	FMAB	FN350	B84142A*R000
	FAM	EMI	250Vac	1-40 A	Yes	85°C	FMAB NEO	FN2020	B84142A*166
Three Phase	FLLD3 BN	EMI	520Vac	7 -180 A	UL	100°C	FMBC	FN3258H	B84143A*R105
	FLLD3 PV	EMI	520Vac	250-2500 A	Pending UL/ENEC	100°C	FMMCC	FN3359	B84143-B
	FLLD4 DN	EMI	520Vac	8-64 A	NO	100°C	FMBD	FN256	B84144A*R140

Power Electronics

Three Phase Filters

- Regenerative drives
- Battery chargers
- UPS
- Inverters
- Welding machines
- Rectifiers
- SMPS



	Series	Function	Rated Voltage	Irms	Agency Approvals	Max Operating Temp	Schurter	Schaffner	TDK
Three Phase	FLLD3 BN	EMI	520Vac	7 -180 A	UL	100°C	FMBC	FN3258H	B84143A*R105
	FLLD3 PV	EMI	520Vac	250-2500 A	Pending UL/ENEC	100°C	FMMCC	FN3359	B84143-B
	FLLD4 DN	EMI	520Vac	8-64 A	NO	100°C	FMBD	FN256	B84144A*R140

Electric Vehicle Chargers

Three Phase Filters



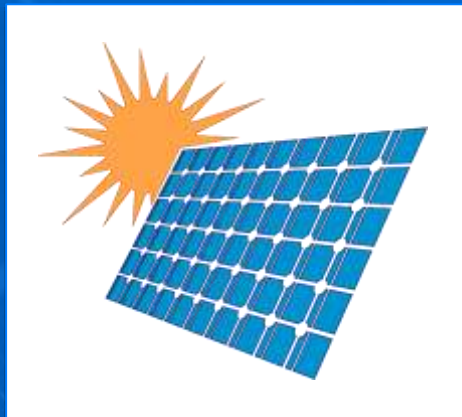
**EMC High Current Filter
(250-2500A)**



FLLD3xxxPVyy

PV Systems

DC and Three Phase Filters



**DC
Filter**



FLLE2 ... PV series

Inverter

**3-Phase AC
EMC Filter**

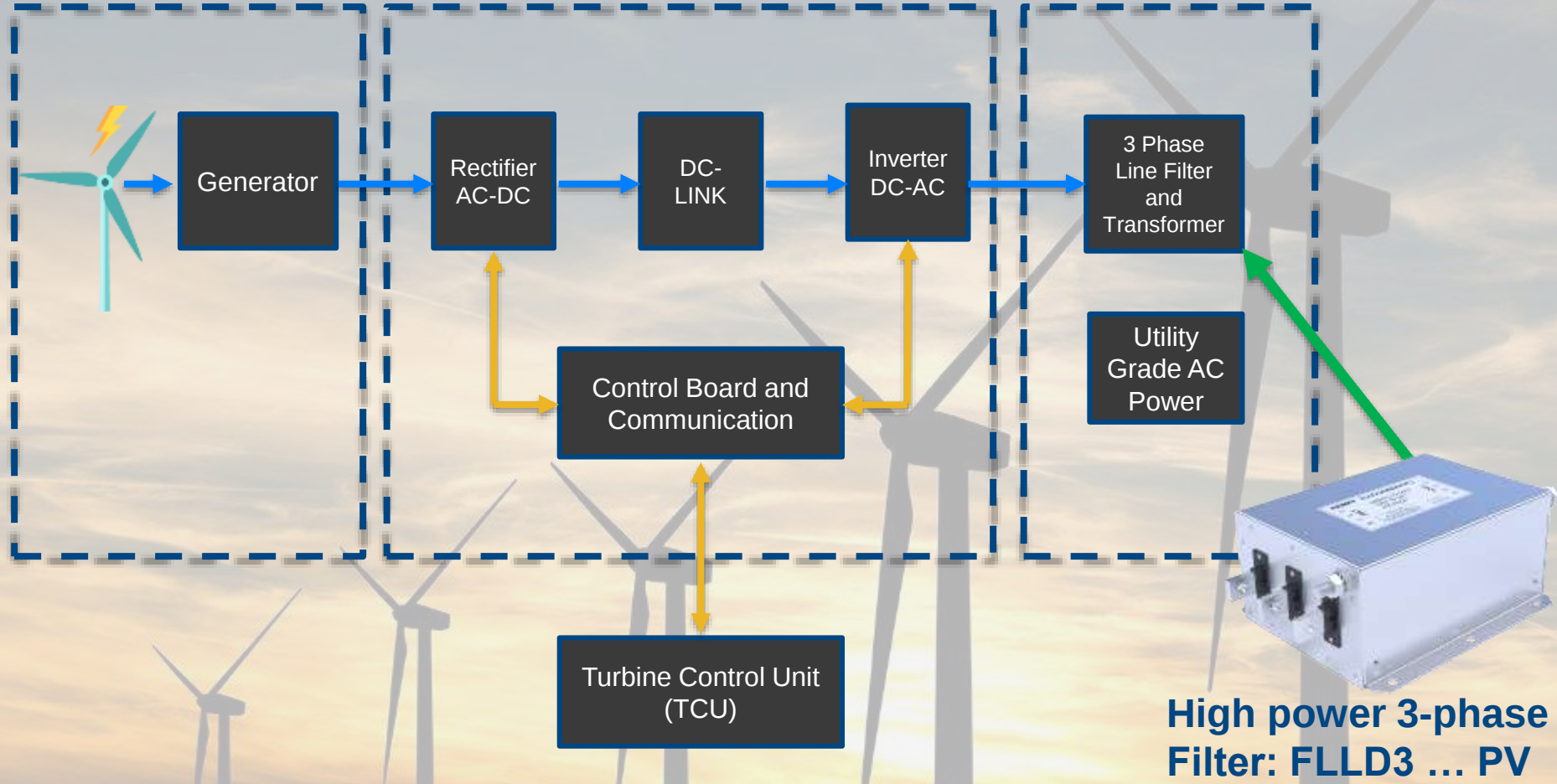


FLLD3 ... PV series

Power Grid

Wind Turbines

Three Phase Filters



Medical Equipment

PCB and Feed-Through Filters



Application	EMI Filter	
Magnetic Resonance (MR)	FLLDU/DH	
Computer Tomography (CT)	FLLDU/DH	

Application	EMI Filter	
Patient Monitors	FAH (No Y Cap)	
Laboratory Equipment	FAH (No Y Cap)	
Test Equipment	FAH (No Y Cap)	

Machine Tools

Three Phase Filters

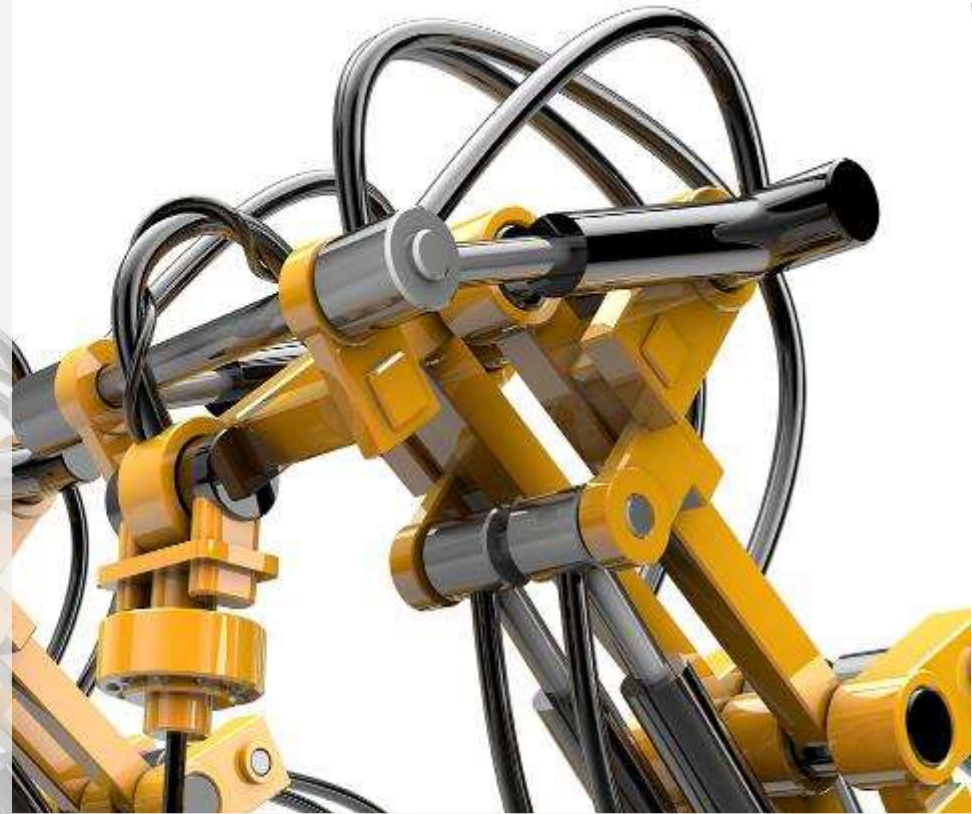
- Printing machines
- Packaging machines
- Laser cutting machines
- Welding machines
- Extruders
- Milling / Drilling machines
- Punching machines
- Wood working machines
- 3D printers

	Series	Function	Rated Voltage	Irms	Agency Approvals	Max Operating Temp	Schurter	Schaffner	TDK
Three Phase	FLLD3 BN	EMI	520Vac	7 -180 A	UL	100°C	FMBC	FN3258H	B84143A*R105
	FLLD3 PV	EMI	520Vac	250-2500 A	Pending UL/ENEC	100°C	FMMCC	FN3359	B84143-B
	FLLD4 DN	EMI	520Vac	8-64 A	NO	100°C	FMBD	FN256	B84144A*R140

Process automation (Alternate)

Three Phase Filters

- Robotics
- Assembly lines
- Mining industry
- Control units
- High speed compressors



	Series	Function	Rated Voltage	Irms	Agency Approvals	Max Operating Temp	Schurter	Schaffner	TDK
Three Phase	FLLD3 BN	EMI	520Vac	7 -180 A	UL	100°C	FMBC	FN3258H	B84143A*R105
	FLLD3 PV	EMI	520Vac	250-2500 A	Pending UL/ENEC	100°C	FMMCC	FN3359	B84143-B
	FLLD4 DN	EMI	520Vac	8-64 A	NO	100°C	FMBD	FN256	B84144A*R140

Roadmap

EMC Filters



Filter Product Road Map

New Standard Series	Type	Q1 2016	Q2 2016	Q3 2016	Feature	Benefit
FLLE2 xxxxPVyy	DC	Samples	Production		Upgrade	Cost
FLLD3xxxMH	AC 3-Phase		Sample	Production	Replace "BN" series	Cost, Performance
FLLD4xxxTH	AC 3-Phase + Neutral		Sample	Production	Replace "DN" series	Cost, Performance, Current Rating



Electronic Components
KEMET
 CHARGED®

EMI Filters for Light Fittings



Series	Current Rating (A)	Maximum Voltage Rating	Benefits
FLH...DE	1.5 - 7	250 VAC	- Complies with EN 60584 - Complies with EN 60581 for light fittings and CE markings - No increase in ground current

Cylindrical Case General Purpose Filters



Series	Current Rating (A)	Maximum Voltage Rating	Benefits
ENG	10 - 18	275 VAC	- Suited for consumer goods, appliances, welding machines, etc. - Compact design, space saving terminals - Push-fit or stud-mount options

Chassis Mount Three Phase Filters

Chassis Mount Three Phase and Neutral Filters • General Purpose



Series	Current Rating (A)	Maximum Voltage Rating	Benefits
FL121...40V	0 - 20	440 VAC	- Good high frequency attenuation - Stakes or quick tag terminations - Low profile and compact

Chassis Mount Three Phase and Neutral Filters • High Performance



Series	Current Rating (A)	Maximum Voltage Rating	Benefits
FL120...40V	25 - 80	440 VAC	- High common mode and asymmetric attenuation - Stakes or terminal block connections
FL124...30V	6 - 64	520 VAC	- Low earth inductance - Compact light weight - Stakes terminals - Isolated environment