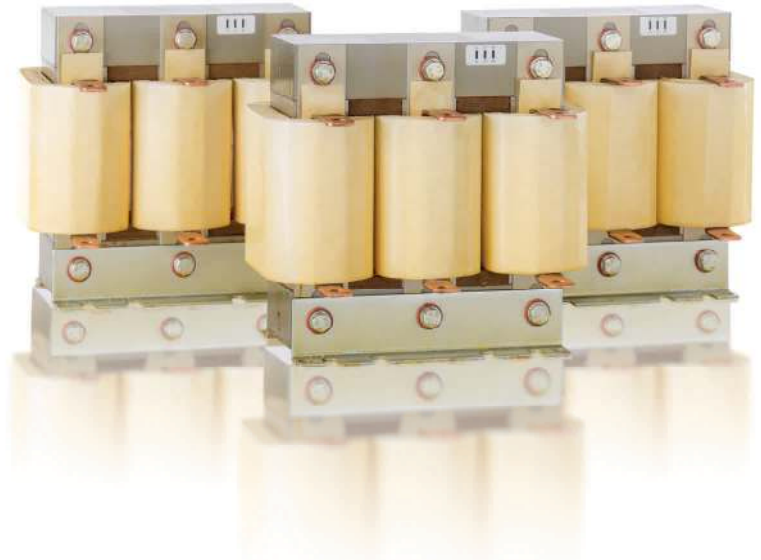


# Type ACL

Line / Load / dv/dt / PWM / SCR Notch Reactors

For use on either line or load side of drives



German Engineering & Quality

Stocked in Wisconsin

Factory support located in Wisconsin

## *The Engineer's Choice for Reactors*

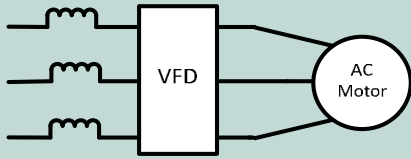
Power Protection for Adjustable Speed Drive Systems



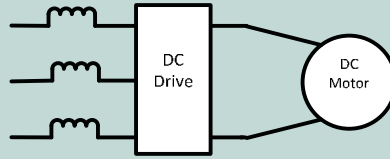
Up to 690 Vac



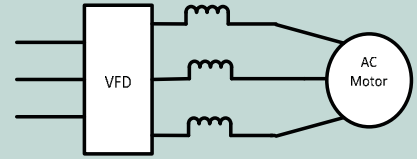
# Mangoldt Reactors Protect Drive Systems



Use as di/dt & Line Reactor



Use as di/dt & SCR notch reactor



Use as dv/dt and PWM load reac-

Protection	Without Mangoldt Reactor	With Mangoldt Reactor
<p>Transient over-voltage can cause drives to “trip off” unexpectedly, or damage diode rectifiers.</p> <p>Use Mangoldt 3% impedance line/load reactors to absorb AC voltage transients, prevent nuisance tripping due to DC bus over-voltage and to protect diodes against transients.</p>	<p>DC Bus Voltage</p>	<p>DC Bus Voltage</p>
<p>Drives cause both harmonic current and voltage distortion which can be harmful to electrical and electronic equipment.</p> <p>Use Mangoldt 5% impedance line/load reactors to reduce motor drive input harmonic current and voltage distortion.</p>		
<p>SCR Rectifiers and thyristors cause voltage notches that distort voltage and create additional false zero crossings which can damage zero cross sensitive equipment.</p> <p>Use Mangoldt 3% impedance line/load reactors to reduce SCR voltage notching and false zero crosses.</p>		
<p>VFDs produce PWM voltage which can increase motor heat and noise and can decrease motor life.</p> <p>Use Mangoldt 5% impedance line/load reactors to reduce voltage stress on motors, to protect motors from PWM voltage, reduce motor noise and temperature.</p>		

# Mangoldt Reactor General Specifications

Phases	3-phase
Voltage Rating	690 Vac max
Frequency	Suitable for 50Hz or 60Hz systems (ie: 480V/60Hz, 400V/50Hz)
Current Ratings	3 Arms to over 1200 Arms
Conductor Material	PolyGap <sup>®</sup> reactors: Aluminum Foil; Small reactors: wound with copper wire
Inductance Tolerance	- / + 3% in all three phases (PolyGap <sup>®</sup> reactors)
Inductance Linearity	5%Z: $\geq 95\%$ of original Inductance at $\geq 190\%$ current 3%Z: $\geq 95\%$ of original Inductance at $\geq 210\%$ current
Dielectric Strength	3kV ( 1 minute) coil-coil, coil-core
Current Spectrum (see below)	Calculated using %Z and fundamental current ( $I_1$ )
Surrounding Air Temperature	50°C maximum
Temperature Rise	115°C, in 50°C surrounding air temperature
Insulation System	Class H, 180°C
Terminations	Solid copper bar or tin-plated copper pressure plate terminal
Relative Humidity	Maximum 95% non-condensing
Agency Approvals	CUL Listed (E173113), IEC/EN60076-3, VDE0532-76-6

**Harmonic Current:** Use Mangoldt line/load reactors ahead of adjustable speed motor drives to reduce the magnitude of harmonic current. The harmonic current that remains is dependent upon the total source side effective percent impedance. The charts below indicate the residual harmonic currents for 3% and 5% impedance reactors. These harmonic currents, in addition to the fundamental current, are responsible for reactor heating. Mangoldt watts loss data is based upon the current spectrum in the tables below. Mangoldt line/load reactors were UL tested and approved with actual harmonic currents flowing.

Current Spectrum for 3% Impedance Reactors at full load										
3%	$I_1$	$I_5$	$I_7$	$I_{11}$	$I_{13}$	$I_{17}$	$I_{19}$	$I_{23}$	$I_{25}$	$I_{rms}$
% rms	94.0%	35.7%	16.0%	6.8%	4.4%	2.6%	2.1%	1.4%	1.0%	100.0%
% fund	100%	39.0%	17.4%	7.4%	4.8%	2.9%	2.3%	1.5%	1.1%	109.2%

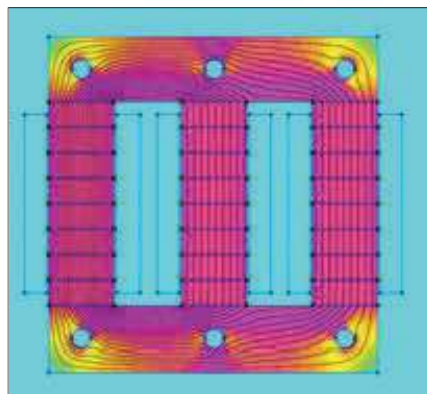
Current Spectrum for 5% Impedance Reactors at full load										
5%	$I_1$	$I_5$	$I_7$	$I_{11}$	$I_{13}$	$I_{17}$	$I_{19}$	$I_{23}$	$I_{25}$	$I_{rms}$
% rms	94%	30.2%	11.7%	5.5%	3.7%	2.1%	1.6%	1.0%	0.8%	100.0%
% fund	100%	32.0%	12.4%	5.8%	3.9%	2.2%	1.7%	1.1%	0.9%	106.0%



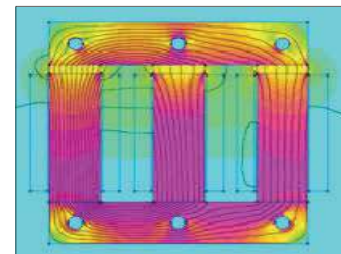
# Review the Facts – Unique features provide

## PolyGap®

The use of many small air gaps (PolyGap®) virtually eliminates the stray magnetic fields emanating from the air gaps that cause circulating currents in the windings. PolyGap® reduces heat losses and audible noise associated with harmonics. Mangoldt line/load reactors are constructed using PolyGap® core technology except where small reactor size is a limiting factor.



Mangoldt PolyGap® reactor cores minimized power losses, circulating currents and stray magnetic fields, which results in optimized reactor performance and efficiency.



Typical reactors have a single air gap that causes magnetic fields and circulating currents in coil windings. The magnetic field for typical reactors also strays outside of the reactor where it may interfere with electronic equipment.

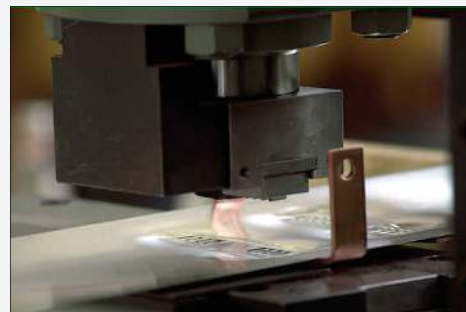


## Vacuum and over-pressure impregnation

All Mangoldt reactors are impregnated with UL Class H varnish in a process involving vacuum, varnish, apply over-pressure and then bake. The result is a long life and a quiet operating reactor.

## Copper terminals are cold pressure welded

Copper terminals are attached to the winding conductors using a cold pressure welding process pioneered by Mangoldt over two decades ago. Permanently attached terminals, with minimal contact resistance, offer a lifetime of trouble free and low power loss connections.



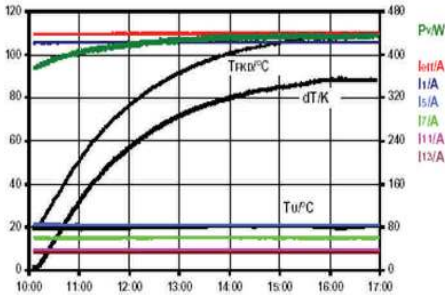
## Balanced Inductance in all three phases

Reactors with PolyGap® construction offer Inductance that is balanced in all three phases. Inductance values achieve the full percent impedance at rated voltage and rated fundamental current. Inductance is  $\pm 3\%$  of the reactor rated inductance in all three phases for reactors having PolyGap® cores.

# benefits that set Mangoldt above the rest!

## Programmable Harmonic Current Generator

Our 1MVA, IGBT based power supply injects specified harmonic currents into a reactor for testing with the same harmonic currents as it will be subjected to in its real world application. The UL testing of Mangoldt reactors was also performed in this manner.



## Computerized winding, core production & testing

Production & testing are highly automated, enabling Mangoldt to offer high-performance reactors with precise inductance, at economical prices. All Mangoldt reactors are 100% tested and serialized. Test reports are always available for individual serial numbers upon request.

## High Inductance Linearity

Mangoldt reactors will maintain at least 95% of rated inductance when current surges to as much as 200% of rated current. This high linearity keeps adequate inductance in the circuit to absorb transients that may be harmful to motor drives. Mangoldt reactors protect motor drive rectifiers and DC bus charging components and can prevent nuisance tripping due to transient overvoltage.

$$I_{lin} = 1.2 \times \sum (I_1 + I_5 + I_7 \dots + I_{25})$$



## Low Losses, especially due to harmonics

Reactors produce heat (losses) based on the square of the current (copper losses) plus the square of the frequencies (iron losses), plus stray losses. Mangoldt's combination of many tiny air gaps (PolyGap®), unique coil design and flux density control, minimizes the overall reactor losses, especially those losses due to harmonics or PWM frequencies. Mangoldt reactors offer high efficiency, with power losses ranging from about 0.2% to about 0.5% depending on percent impedance and current ratings.





# Selection Tables – 480V, 60Hz

For 240V applications, use 480V, 3% reactor selected by FLA

Mangoldt line/load reactors may be selected by motor full load amperes (FLA) or by horsepower (HP). Choose from 3% or 5% impedance to achieve the desired performance level. See page 2 for examples of applications, suggested impedance and typical performance. Mangoldt reactors may be used at any voltage up to 690 Vrms. When using reactors at higher voltages than shown in selection tables, their effective percent impedance will be lower and therefore the current spectrum will be more severe. See Page 8 or contact our Technical Support Office for advice when applying reactors at other voltages or frequencies.

3% Impedance, 480V, 60Hz							
Cat No	Max. Amps	HP	mH	%Z	Losses (watts)	Weight (kg / lbs)	
<i>ACL43-0003</i>	3	1.5	8.000	3.3%	20	2.6	5.7
<i>ACL43-0005</i>	5	3	4.700	3.2%	25	2.6	5.7
<i>ACL43-0008</i>	8	5	2.950	3.2%	30	4.2	9.2
<i>ACL43-0011</i>	11	7.5	2.200	3.3%	40	4.2	9.2
<i>ACL43-0014</i>	14	10	1.700	3.2%	45	5.1	11.2
<i>ACL43-0022</i>	22	15	1.100	3.3%	50	6.8	15.0
<i>ACL43-0028</i>	28	20	0.860	3.3%	70	7.7	16.9
<i>ACL43-0035</i>	35	25	0.700	3.3%	80	9.3	20.5
<i>ACL43-0040</i>	40	30	0.580	3.2%	90	9.7	21.3
<i>ACL43-0052</i>	52	40	0.460	3.3%	120	12.9	28.4
<i>ACL43-0066</i>	66	50	0.370	3.3%	120	15.4	33.9
<i>ACL43-0081</i>	81	60	0.300	3.3%	140	16.6	36.5
<i>ACL43-0100</i>	100	75	0.240	3.3%	160	18.6	41
<i>ACL43-0125</i>	125	100	0.190	3.2%	190	20.0	44
<i>ACL43-0158</i>	158	125	0.150	3.2%	200	24.5	54
<i>ACL43-0185</i>	185	150	0.130	3.3%	240	28.7	63
<i>ACL43-0242</i>	242	200	0.100	3.3%	270	36.2	80
<i>ACL43-0302</i>	302	250	0.080	3.3%	330	41.2	91
<i>ACL43-0365</i>	365	300	0.066	3.3%	380	50.8	112
<i>ACL43-0415</i>	415	350	0.058	3.3%	420	52.0	114
<i>ACL43-0480</i>	480	400	0.050	3.3%	460	57.0	125
<i>ACL43-0515</i>	515	450	0.047	3.3%	500	65.0	143
<i>ACL43-0594</i>	594	500	0.040	3.2%	560	73.1	161
<i>ACL43-0731</i>	731	600	0.033	3.3%	730	80.0	176
<i>ACL43-0841</i>	841	700	0.029	3.3%	830	100.0	220
<i>ACL43-0961</i>	961	800	0.025	3.3%	920	100.0	220
<i>ACL43-1089</i>	1089	900	0.022	3.3%	980	119.0	262
<i>ACL43-1210</i>	1210	1000	0.020	3.3%	1050	139.0	306

5% Impedance, 480V, 60Hz							
Cat No	Max. Amps	HP	mH	%Z	Losses (watts)	Weight (kg / lbs)	
<i>ACL45-0003</i>	3	1.5	13.000	5.3%	20	3.2	7.0
<i>ACL45-0005</i>	5	3	7.800	5.3%	35	3.2	7.0
<i>ACL45-0008</i>	8	5	4.900	5.3%	40	5.2	11.4
<i>ACL45-0011</i>	11	7.5	3.500	5.2%	45	5.2	11.4
<i>ACL45-0014</i>	14	10	2.700	5.1%	50	6.8	15.0
<i>ACL45-0021</i>	21	15	1.850	5.3%	70	9.2	20.2
<i>ACL45-0027</i>	27	20	1.450	5.3%	80	11.2	24.6
<i>ACL45-0034</i>	34	25	1.150	5.3%	110	11.0	24.2
<i>ACL45-0040</i>	40	30	0.960	5.2%	120	12.0	26.4
<i>ACL45-0052</i>	52	40	0.750	5.3%	130	18.0	39.6
<i>ACL45-0065</i>	65	50	0.600	5.3%	140	19.0	41.8
<i>ACL45-0080</i>	80	60	0.490	5.3%	180	20.0	44.0
<i>ACL45-0106</i>	106	75	0.370	5.3%	210	23.0	51
<i>ACL45-0129</i>	129	100	0.300	5.3%	235	30.5	67
<i>ACL45-0159</i>	159	125	0.245	5.3%	260	35.0	77
<i>ACL45-0185</i>	185	150	0.210	5.3%	295	41.0	90
<i>ACL45-0243</i>	243	200	0.159	5.3%	390	44.0	97
<i>ACL45-0302</i>	302	250	0.130	5.3%	440	51.0	112
<i>ACL45-0366</i>	366	300	0.106	5.3%	510	58.0	128
<i>ACL45-0429</i>	429	350	0.092	5.4%	570	58.0	128
<i>ACL45-0488</i>	488	400	0.080	5.3%	660	74.0	163
<i>ACL45-0530</i>	530	450	0.074	5.3%	750	97.0	213
<i>ACL45-0615</i>	615	500	0.065	5.4%	800	103.0	227
<i>ACL45-0731</i>	731	600	0.053	5.3%	870	123.0	271
<i>ACL45-0848</i>	848	700	0.046	5.3%	990	125.0	275
<i>ACL45-0975</i>	975	800	0.040	5.3%	1050	152.0	334
<i>ACL45-1081</i>	1081	900	0.036	5.3%	1300	154.0	339
<i>ACL45-1224</i>	1224	1000	0.032	5.3%	1300	180.0	396

Note: Catalog numbers in italics are physically too small for PolyGap® core construction.



\*Effective % impedance may be reduced by using a reactor with a larger current rating.

Ex: % Z<sub>eff</sub> = Z% x I(actual) / I(rated). [ 5% x 65/80 = 4.06% ]

# Selection Tables – 600V, 60Hz



For 240V applications, use 480V, 3% reactor selected by FLA

## 50/60Hz Capability

Mangoldt reactors may be used on 50Hz or 60Hz power systems. When using 60Hz reactors on a 50Hz system, unless the voltage is also lower by the ratio of 50/60, their percent impedance will be about 17% lower. Therefore, the current spectrum will be more severe. Consult our Technical Support Office for advice about use on 50Hz.

Exception: 480V, 60Hz reactors may be applied at the same current on 400V, 50Hz systems.

3% Impedance, 600V, 60Hz						
Cat. No.	Max. Amps	HP	mH	%Z	Losses (watts)	Weight (kg / lbs)
<i>ACL63-0003</i>	3	2	10.000	3.3%	20	3.4 7.48
<i>ACL63-0006</i>	6.1	5	5.000	3.3%	40	3.4 7.48
<i>ACL63-0009</i>	9	7.5	3.200	3.1%	40	5.2 11.44
<i>ACL63-0011</i>	11	10	2.700	3.2%	50	5.1 11.22
ACL63-0017	17	15	1.700	3.1%	60	7.2 15.84
ACL63-0022	22	20	1.350	3.2%	70	9.1 20.02
ACL63-0028	28	25	1.100	3.4%	90	9.7 21.34
ACL63-0035	35	30	0.860	3.3%	110	11 24.2
ACL63-0043	43	40	0.710	3.3%	120	15 33.0
ACL63-0053	53	50	0.560	3.2%	130	16 35.2
ACL63-0067	67	60	0.450	3.3%	150	19 41.8
ACL63-0082	82	75	0.360	3.2%	180	19 41.8
ACL63-0104	104	100	0.290	3.3%	220	23 50.6
ACL63-0131	131	125	0.230	3.3%	260	29 63.8
ACL63-0144	144	150	0.210	3.3%	290	28 61.6
ACL63-0198	198	200	0.150	3.2%	320	38 83.6
ACL63-0247	247	250	0.120	3.2%	400	42 92.4
ACL63-0300	300	300	0.100	3.3%	440	50 110
ACL63-0344	344	350	0.088	3.3%	490	57 125.4
ACL63-0388	388	400	0.077	3.3%	580	68 149.6
ACL63-0420	420	450	0.071	3.2%	680	72 158.4
ACL63-0480	480	500	0.060	3.1%	650	78 171.6
ACL63-0579	579	600	0.052	3.3%	740	80 176
ACL63-0677	677	700	0.044	3.2%	910	109 239.8
ACL63-0775	775	800	0.039	3.3%	910	122 268.4
ACL63-0873	873	900	0.034	3.2%	1150	128 281.6
ACL63-0972	972	1000	0.031	3.3%	1200	151 332.2
ACL63-1168	1168	1200	0.026	3.3%	1250	175 385

5% Impedance, 600V, 60Hz						
Cat No	Max. Amps	HP	mH	%Z	Losses (watts)	Weight (kg / lbs)
<i>ACL65-0003</i>	3	2	16.500	5.4%	20	4.1 9.02
<i>ACL65-0006</i>	6.1	5	8.000	5.3%	40	4.1 9.02
<i>ACL65-0009</i>	9	7.5	5.400	5.3%	50	6.7 14.74
<i>ACL65-0011</i>	11	10	4.500	5.4%	60	6.7 14.74
ACL65-0017	17	15	2.900	5.4%	80	8.8 19.36
ACL65-0022	22	20	2.200	5.3%	90	10 22.0
ACL65-0027	27	25	1.800	5.3%	110	13 28.6
ACL65-0034	34	30	1.400	5.2%	120	15 33.0
ACL65-0041	41	40	1.190	5.3%	140	17 37.4
ACL65-0052	52	50	0.950	5.4%	170	19 41.8
ACL65-0066	66	60	0.750	5.4%	190	23 50.6
ACL65-0081	81	75	0.610	5.4%	220	28 61.6
ACL65-0106	106	100	0.460	5.3%	260	29 63.8
ACL65-0129	129	125	0.380	5.3%	300	35 77.0
ACL65-0148	148	150	0.330	5.3%	340	38 83.6
ACL65-0192	192	200	0.250	5.2%	400	44 96.8
ACL65-0244	244	250	0.200	5.3%	500	49 107.8
ACL65-0291	291	300	0.165	5.2%	590	68 149.6
ACL65-0339	339	350	0.145	5.3%	670	74 162.8
ACL65-0382	382	400	0.130	5.4%	660	78 171.6
ACL65-0424	424	450	0.115	5.3%	710	93 204.6
ACL65-0488	488	500	0.100	5.3%	810	103 226.6
ACL65-0577	577	600	0.083	5.2%	940	102 224.4
ACL65-0673	673	700	0.073	5.3%	1100	122 268.4
ACL65-0774	774	800	0.063	5.3%	1050	150 330.0
ACL65-0869	869	900	0.056	5.3%	1150	172 378.4
ACL65-0975	975	1000	0.050	5.3%	1400	175 385.0
ACL65-1166	1166	1200	0.042	5.3%	1650	201 442.2

Note: Catalog numbers in italics are physically too small for PolyGap® core construction.

\*Effective % impedance may be reduced by using a reactor with a larger current rating.

Ex: % Zeff = Z% x I(actual) / I(rated). [ 5% x 67/82 = 4.08% ]



# Application Data

## Apply reactors at lower voltage

Mangoldt line/load reactors may be applied as line or load reactors at a lower voltage, within their rated current. Power losses (watts loss) will be equal to or lower than the published data.

## Apply reactors at lower frequency

Mangoldt line/load reactors may be applied as line or load reactors at a lower frequency (ie: 50Hz), within their rated current. Power losses (watts) will be equal to or lower than the published data.

## Apply reactors at higher voltage

Mangoldt 600V reactors may be applied at up to 690V volts, within their rated current, but will experience higher losses. At 690V, a 600V reactor at rated current will have effective impedance that is 87% of their 600V rated % impedance, therefore power losses (watts) may increase by up to 10%.

## Apply reactors at higher frequency

Mangoldt line/load reactors must be derated if used at frequencies above 60Hz. Consult our Technical Support Office for assistance.

## Inductive Reactance: $X_L = 2 \pi fL$ (Ohms)

Reactors have the natural ability to resist the flow of harmonic current. This is accomplished by inductive reactance ( $X_L$ ). Inductive reactance, expressed in ohms, is proportional to frequency. The higher the frequency, the higher its ohms.

## Effective % Impedance: $\%Z \times (I_1 \text{ actual} / I_1 \text{ rated})$

Line/load reactors are most effective when operating at or near their rated current. For a motor drive, the effective % impedance is proportional to the ratio of the actual fundamental (60Hz) current to the reactor rated current. Input harmonic current distortion (%THD-i) for an individual drive/reactor typically is lowest at rated current, even though actual amperes of harmonic current may decrease as load is reduced.



3-phase Reactor with optional temperature switch.

### IEEE-519-2014 Limits

$I_{sc} / I_L$	TDD
<20	5%
20 < 50	8%
50 < 100	12%
100 < 1000	15%
1000 +	20%



# Application Data

## First Line of Defense Against Harmonics

Line reactors are an economical means of reducing harmonic current and voltage distortion in drive systems. Under full-load operating conditions, for an individual drive, line reactors can reduce input current distortion from as much as 60% to 100% to as little as 35% THD-i. Although in many cases, line reactors alone will not be sufficient to comply with IEEE-519, they will reduce the cost of an overall harmonic mitigation solution.

When each drive includes a 5% impedance line reactor, and if all other loads are linear (non-harmonic producing) loads, it is possible to achieve compliance with the %TDD limits established by IEEE-519. The chart below demonstrates that IEEE-519 compliance is possible under certain conditions, using only line reactors.

Example: if every drive has a 5% line reactor and drives comprise 20% of the electrical load, (the balance being linear loads), the harmonic current distortion at the PCC would be only 7% TDD ( 35% THD-i x 20% = 7% TDD).

VFDs as % of total load	14% VFDs	20% VFDs	33% VFDs	42% VFDs	57% VFDs
Expected % THD-i at PCC	4.9% THD-i	7% THD-i	11.55% THD-i	14.7% THD-i	19.95% THD-i



Precise, balanced inductance in all 3-phases.

## Typical Harmonic Current Distortion (%THD-i)

The harmonic current spectrum that will be measured for a single drive is very predictable based upon the effective % impedance, which varies with load. You should expect the measured %THD-i to be the lowest at the reactor rated current and to increase as current is reduced below reactor rated current. Although the %THD-i increases as load is reduced, typically the amperes of harmonic current will decrease as load current is reduced.

%Z	25% Load	50% Load	75% Load	100% Load
3%	82%	60%	50%	44%
4%	72%	52%	44%	39%
5%	65%	47.5%	40%	35%

## Application Engineering Support

Mangoldt has been producing reactors for a wide variety of applications for many decades. If you have any questions regarding an application - please feel free to contact our Technical Support Office.



# Dimensions & Weight

## 480V

### 2D & 3D drawings

Mangoldt can provide both 2D and 3D drawings. Please contact the Technical Support Office or the Stocking Partner Sales Office for PDF, DWG or STP files.

480V, 3% Impedance					
-/+5mm	Fig.	A (mm)	B (mm)	C (mm)	Weight (kg)
ACL43-0003	1	94	105	62	2.6
ACL43-0005	1	94	105	62	2.6
ACL43-0008	1	117	125	68	4.2
ACL43-0011	1	117	125	68	4.2
ACL43-0014	1	125	152	86	5.2
ACL43-0022	1	125	152	101	7
ACL43-0028	1	174	213	93	7.7
ACL43-0035	1	176	213	103	9.3
ACL43-0040	1	178	159	122	9.7
ACL43-0052	1	200	179	131	13
ACL43-0066	1	223	162	141	16
ACL43-0081	1	223	177	141	17
ACL43-0100	1	223	202	141	19
ACL43-0125	1	239	212	149	20
ACL43-0158	1	240	212	165	25
ACL43-0185	1	261	233	170	29
ACL43-0242	1	300	236	186	37
ACL43-0302	1	300	268	194	41
ACL43-0365	1	300	297	209	51
ACL43-0415	1	300	298	216	53
ACL43-0480	1	300	330	215	58
ACL43-0515	1	300	329	226	65
ACL43-0594	1	300	422	215	73
ACL43-0731	1	300	455	219	80
ACL43-0841	2	330	517	234	100
ACL43-0961	2	330	550	234	100
ACL43-1089	2	394	575	244	119
ACL43-1210	2	394	662	244	139

480V, 5% Impedance					
-/+5mm	Fig.	A (mm)	B (mm)	C (mm)	Weight (kg)
ACL45-0003	1	117	125	58	3.2
ACL45-0005	1	117	125	58	3.2
ACL45-0008	1	144	152	86	5.2
ACL45-0011	1	144	152	86	5.2
ACL45-0014	1	147	152	101	6.8
ACL45-0021	1	175	213	103	9.2
ACL45-0027	1	175	213	113	11
ACL45-0034	1	202	179	121	11
ACL45-0040	1	202	179	131	13
ACL45-0052	1	224	177	142	19
ACL45-0065	1	226	201	142	19
ACL45-0080	1	239	212	139	20
ACL45-0106	1	239	212	150	23
ACL45-0129	1	263	251	159	31
ACL45-0159	1	297	235	181	35
ACL45-0185	1	300	236	199	41
ACL45-0243	1	300	297	182	44
ACL45-0302	1	300	297	201	52
ACL45-0366	1	300	300	211	58
ACL45-0429	1	300	329	243	75
ACL45-0488	1	300	423	217	75
ACL45-0530	1	300	421	249	97
ACL45-0615	2	330	515	230	103
ACL45-0731	2	394	533	238	123
ACL45-0848	2	394	566	247	125
ACL45-0975	2	452	591	258	152
ACL45-1081	2	394	662	258	154
ACL45-1224	2	452	686	262	180

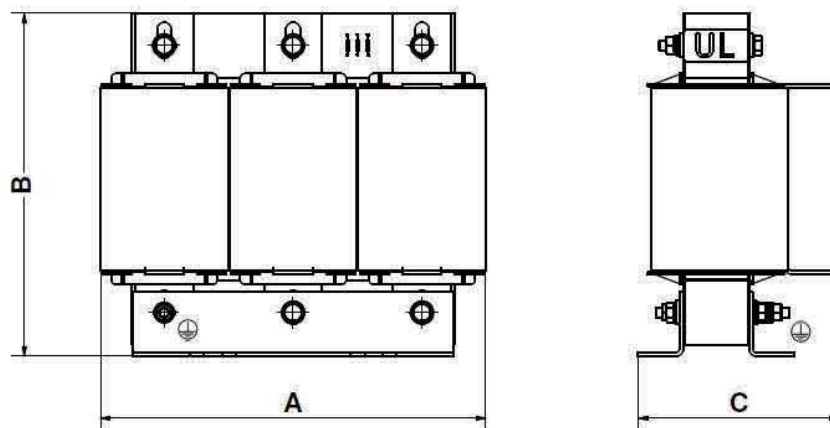


Fig. 1

## 2D & 3D drawings

Mangoldt can provide both 2D and 3D drawings. Please contact the Technical Support Office or the Stocking Partner Sales Office for PDF, DWG or STP files.

# Dimensions & Weight 600V

600V, 3% Impedance					
-/+5mm	Fig.	A (mm)	B (mm)	C (mm)	Weight (kg)
ACL63-0003	1	117	125	58	3.2
ACL63-0006	1	117	125	58	3.2
ACL63-0009	1	144	152	86	5.2
ACL63-0011	1	144	152	86	5.2
ACL63-0017	1	174	213	93	7.2
ACL63-0022	1	176	213	103	9.1
ACL63-0028	1	178	159	122	9.7
ACL63-0035	1	200	179	122	11
ACL63-0043	1	220	162	139	15
ACL63-0053	1	220	176	139	17
ACL63-0067	1	222	201	140	19
ACL63-0082	1	232	211	137	20
ACL63-0104	1	236	212	149	23
ACL63-0131	1	254	251	164	30
ACL63-0144	1	299	267	156	28
ACL63-0198	1	300	266	180	39
ACL63-0247	1	300	297	180	43
ACL63-0300	1	300	297	198	50
ACL63-0344	1	300	330	209	57
ACL63-0388	1	300	423	193	68
ACL63-0420	1	300	423	219	73
ACL63-0480	1	300	419	219	78
ACL63-0579	1	360	442	228	80
ACL63-0677	2	330	550	209	109
ACL63-0775	2	394	566	252	122
ACL63-0873	2	394	664	235	128
ACL63-0972	2	452	688	231	151
ACL63-1168	2	452	687	259	175

600V, 5% Impedance					
-/+5mm	Fig.	A (mm)	B (mm)	C (mm)	Weight (kg)
ACL65-0003	1	117	125	68	4.2
ACL65-0006	1	117	125	68	4.2
ACL65-0009	1	147	152	101	6.8
ACL65-0011	1	147	152	101	6.8
ACL65-0017	1	176	213	103	8.8
ACL65-0022	1	176	213	103	11
ACL65-0027	1	202	179	132	13
ACL65-0034	1	223	162	141	16
ACL65-0041	1	223	176	141	17
ACL65-0052	1	223	201	141	19
ACL65-0066	1	235	211	148	23
ACL65-0081	1	257	232	156	28
ACL65-0106	1	263	232	168	29
ACL65-0129	1	297	234	181	35
ACL65-0148	1	300	266	176	39
ACL65-0192	1	300	298	183	44
ACL65-0244	1	300	329	184	49
ACL65-0291	1	300	422	194	68
ACL65-0339	1	300	454	195	74
ACL65-0382	1	300	421	219	78
ACL65-0424	1	300	420	247	93
ACL65-0488	1	300	451	247	103
ACL65-0577	1	360	470	233	103
ACL65-0673	2	394	567	233	122
ACL65-0774	2	452	588	240	150
ACL65-0869	2	452	589	266	172
ACL65-0975	2	452	683	250	175
ACL65-1166	2	452	689	275	201

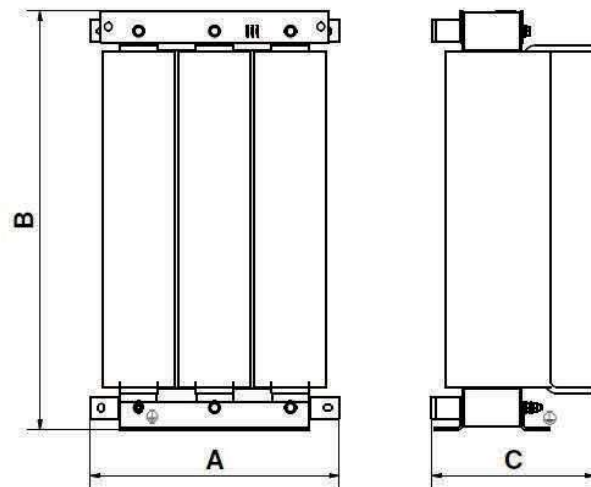


Fig. 2

# The Global Standard for Reactors!

## Custom Reactors

Mangoldt specializes in the design and manufacture of custom reactors for low voltage and medium voltage (up to 35kV) applications. We will be happy to design reactors that meet your special requirements. Please contact either our Technical Support Office or Stocking Partner Sales Office for a quotation.



## Custom Reactor Capabilities - up to 35kV

Air Core & Iron Core Inductors

Filter Reactors

Common Mode Chokes

Line/Load/dv/dt/PWM/ Notch Reactors

Audio Frequency Blocking Filters

Tuning Inductors

Compensation Chokes

Current Limiting Inductors

PWM Sinusoidal Filter Inductors

Water-Cooled Inductors

Smoothing Reactors

Active Filter Reactors

PWM Reactors

dv/dt Limiting Inductors

## Sales & Technical Support Locations

### Stocking Partner Sales Office

Power **Quality** Components

W136N5239 Campbell Court  
Menomonee Falls, WI 53051

P: 1-262-783-5970

F: 1-262-783-5974

[www.pqcomponents.com](http://www.pqcomponents.com)

[info@pqcomponents.com](mailto:info@pqcomponents.com)

### Technical Support Office

Power Quality Specialists

Allied Industrial Marketing, Inc.  
W67 N222 Evergreen Blvd. Suite 209  
Cedarburg, WI 53012

P: 1-262-618-2403

F: 1-262-618-2303

[www.alliedindustrialmarketing.com](http://www.alliedindustrialmarketing.com)

### World Headquarters

Hans von Mangoldt GmbH

Hergelsbendenstr. 18

D- 52080 Aachen

[www.mangoldt.com](http://www.mangoldt.com)

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