ACS Detuned Reactor - for use in PF correction capacitor bank

Application

1. To create a 'detuned' natural frequency with power factor correction capacitor. This eliminate system resonance with harmonics which will damage the capacitor bank.
2. To reduce harmonics distortion and reduce the problems associated with this harmonics such as over heating of transformer and nuisance tripping.
3. Reduce switching transient inrush current of capacitors. This will reduce the circuit breaker failure and flickers in the power system.
4. The use of specific filtering factor requires careful system analysis. As a general rule,
   - *p=7% is the ideal combination for max. capacitor protection, harmonics reduction at min. cost.*
   - *P=6% is used when increase reduction on 5th & 7th harmonics is required.*
   - *p=14% is used in 3rd harmonics rich system. Offer max. capacitor production.*

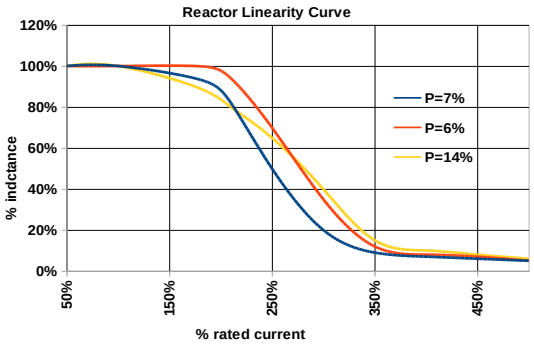
Features of ACS Detuned Reactor

1. Dry type, natural air cool type for indoor use. Ventilating fan is needed in enclosed cubical.
2. Iron core - constructed with low loss silicon steel.
3. Air gaps – multiple gaps. High linear performance of reactor with less gap losses and noise.
4. Aluminum wire and aluminum foil. For current above 60A. Alu foil is usually used.
   - Alu wire and foil have been used as transformer conductor for more than 30 years.
   - Alu foils also have higher ability to withstand short-circuit and transient switching current.
5. Nomex® or equivalent insulation paper is used for layer insulation.
6. Terminal – copper bar connection for current above 20A. JIS type terminals for lower current.
7. Complete with over temperature, bi-metal 145ºC, normally closed thermostat.

Specification of ACS De-tuned Reactor

1. Harmonic current handling capacity, as per chart below.

Rated Reactor Current	P = 7 %	P = 6 %	P = 14 %
I 1 (rated, fundamental)	1.06x Ic	1.06 Ic	1.06 Ic
I 3 (3rd harmonics)	0.11x I1	0.09x I1	0.25x I1
I 5 (5rd harmonics)	0.25x I1	0.35x I1	0.08x I1
I 7 (7rd harmonics)	0.08x I1	0.10x I1	0.03x I1
I th (Max. thermal)	1.12x I1	1.18x I1	1.12x I1
Linearity (-10% drop)	1.75x I1	2.1x I1	1.60x I1



***** Will operate satisfactory in power system with voltage harmonics (THDU) up to 5%.***
***** Special design reactor is required for system with THDU greater than 5%.***

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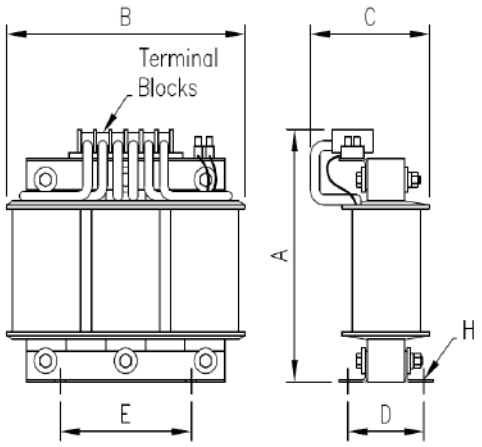
Rev: 20171004

1. Inductance tolerance is manufactured and calibrated to be within ±3%. 100% inspection.
2. Coil-Coil, turn-turn insulation strength 100% tested by Surge Comparison testing at 3.0KV
3. Design: **IEC 60076-6:2007.**
4. Insulation class - Class H, 180ºC.
5. Insulation varnish - UL comply, epoxy base varnish. Vacuum impregnated, oven cured.
6. Insulation: 100% insulation strength tested at 3.0kV 60s.
7. Operating temperature: 120ºC temperature rise at max. ambient temperature of 40°C.
8. Noise level: below 65db. - reactor will not hum at rated current.

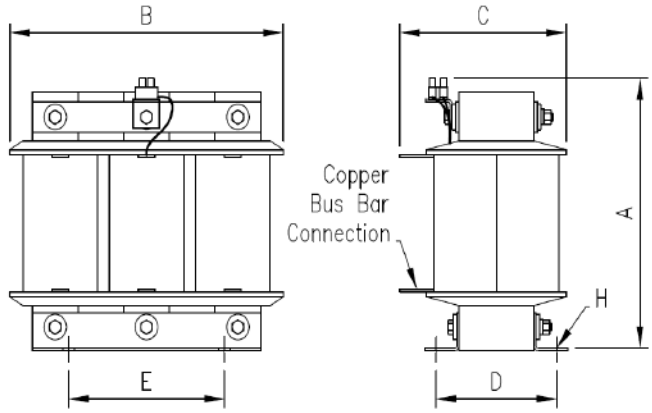
*** If THDU exceeded 5%, specially produced P=8% detuned reactor maybe used.
*** If THDU exceeded 10%, P=14% detuned reactor should be used.
*** Other specification available upon request.
*** P=6% & 14%. available upon request.*
**** 60Hz reactor for Philippines, Taiwan and related market available upon request.*

Dimension of ACS Detuned Reactor – Malaysia Specification

Apply to p= 6, 7 & 14 % reactor, with 525V 50Hz capacitor at 415V 50Hz only.



Vert. mnt: Type A



Vert. mnt: Type B

Capacitor Ucr 525V	*I_{th}*	*P =*	*Pw (Ic)*	*A*	*B*	*C*	*D*	*E*	*H_{holes}*	*Wt*		*P/No:*
Qcr kVAr	**Amp**	**%**	**Watt**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**kg**	**type**	**Model,%P-Un/Qc_Ucr/Qcr**
5	5.5	7%	35	170	175	110	74	116	10	5	A	DXM07-415/03-525/005
10	11.0	7%	45	205	210	115	70	116	10	7	A	DXM07-415/07-525/010
15	16.5	7%	55	205	210	115	74	116	10	8.5	A	DXM07-415/10-525/015
20	22.0	7%	65	195	210	135	82	116	10	10	B	DXM07-415/13-525/020
25	27.5	7%	70	195	210	145	90	116	10	13	B	DXM07-415/17-525/025
30	33.0	7%	80	220	240	145	94	136	10	14	B	DXM07-415/20-525/030
40	44.0	7%	90	220	240	150	98	136	10	15	B	DXM07-415/27-525/040
50	55.0	7%	110	220	240	165	110	136	10	18	B	DXM07-415/34-525/050
60	66.0	7%	125	220	240	175	125	136	10	22	B	DXM07-415/40-525/060
80	88.0	7%	155	270	305	165	120	170	10	29	B	DXM07-415/54-525/080
100	110.0	7%	170	270	305	185	135	170	10	35	B	DXM07-415/67-525/100
120	132.0	7%	190	270	305	200	145	170	10	42	B	DXM07-415/81-525/120
160	165.0	7%	220	300	290	200	155	170	10	48	B	DXM07-415/101-525/160
200	220.0	7%	260	325	355	200	190	300	16	65	B	DXM07-415/134-525/200

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Capacitor Ucr 525V	I_{th}	*P =*	*Pw (Ic)*	*A*	*B*	*C*	*D*	*E*	*H-holes*	*Wt*		*P/No:*
20	23.1	14%	90	220	240	160	108	136	10	16	B	DXM14M-415/15-525/20
25	27.5	14%	112	220	240	170	115	136	10	20	B	DXM14-415/18-525/025
30	33.0	14%	120	230	295	170	120	170	10	26	B	DXM14-415/22-525/030
40	44.0	14%	135	230	285	170	130	170	10	37	B	DXM14-415/29-525/040
50	55.0	14%	160	270	305	185	140	170	10	35	B	DXM14-415/36-525/050
60	66.0	14%	190	285	355	185	175	300	16	45	B	DXM14-415/43-525/060
80	88.0	14%	225	280	370	205	195	300	16	55	B	DXM14-415/58-525/080
100	110.0	14%	265	325	345	210	210	300	16	68	B	DXM14-415/72-525/100
120	132.0	14%	330	325	370	230	205	300	16	75	B	DXM14-415/86-525/120
10	11.0	6%	45	200	210	110	70	116	10	9	A	DXM06-415/07-525/010
15	16.5	6%	55	200	210	115	74	116	10	11	A	DXM06-415/10-525/015
20	23.0	6%	65	195	210	135	82	116	10	12	B	DXM06-415/13-525/020
25	27.5	6%	70	195	210	145	92	116	10	15	B	DXM06-415/17-525/025
30	33.0	6%	90	220	240	145	92	136	10	20	B	DXM06-415/20-525/030
40	44.0	6%	110	220	240	155	105	136	10	18	B	DXM06-415/27-525/040
50	55.0	6%	125	220	240	170	115	136	10	23	B	DXM06-415/33-525/050
60	66.0	6%	155	220	240	175	120	136	10	27	B	DXM06-415/40-525/060
80	92.5	6%	170	270	305	170	120	170	10	30	B	DXM06-415/53-525/080
100	110.0	6%	190	270	305	185	135	170	10	45	B	DXM06-415/67-525/100
120	132.0	6%	220	280	350	195	180	300	16	55	B	DXM06-415/80-525/120
150	165.0	6%	260	335	370	320	175	300	16	68	B	DXM06-415/100-525/150

** Dimension subject to change without prior notice.*
*** Unspecified size will be make available upon request.*

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