

## The new 18-Pulse Mitigator – Autotransformer



Schaffner Mitigator 18-Pulse Autotransformer delivers simple, cost-effective harmonic reduction for variable frequency drive applications within water/wastewater treatment, HVAC, pumping lift stations and other applications sensitive to harmonic interference.

Line reactor can be mounted left (standard) or right of center or shipped separately from autotransformer.

### Approvals



### Mitigator Accreditation

- UL Recognized: File #E181486
- CSA Recognition: Per C22.2 No. 47-M90

### Design Standards

- UL 1561 & UL 1446

### Quality Assurance Testing

1. Turns Ratio Test
2. Resistance Test
3. Excitation Current Test
4. Watts Check
5. Open Circuit Voltage Test
6. Hi-Pot Test

### US Patent

7,274,280

### Will redefine the performance of 18-Pulse Autotransformers

The new **Mitigator 18-Pulse Autotransformer**, a 2007 patented design by Derek A. Paice and manufactured by Schaffner, continues our leadership as a designer and manufacturer of custom transformers and inductors. The revolutionary Mitigator 18-Pulse Autotransformer is offered in 5 HP to 800 HP and designed to fit into smaller footprints. The Mitigator delivers:

#### Design Features

Unique topology with nine phase delta output achieving nominally equal amplitude voltages and a nominal 40° phase separation.

Designed in accordance with UL 1561, achieving UL recognition certification.

Aluminum windings used on most sizes with a patented, efficient coil winding topology.

Class R Insulation with 200°C normally closed thermal switches.

#### Customer Benefits

Superior harmonic mitigation that defines a new best-practice performance standard for 18-Pulse technology.

Superior reliability under real world operating conditions.

Lower cost option using quality materials that are more price stable compared to previous designs.

Temperature switches ensure safety of transformer in the event of a large electrical grid imbalance, wiring defect or process upset.

### Dimensions

Input 3-Phase; 480 V; 60 Hz – Output 9-Phase; 247 V L-N, 427 V L-L, 60 Hz

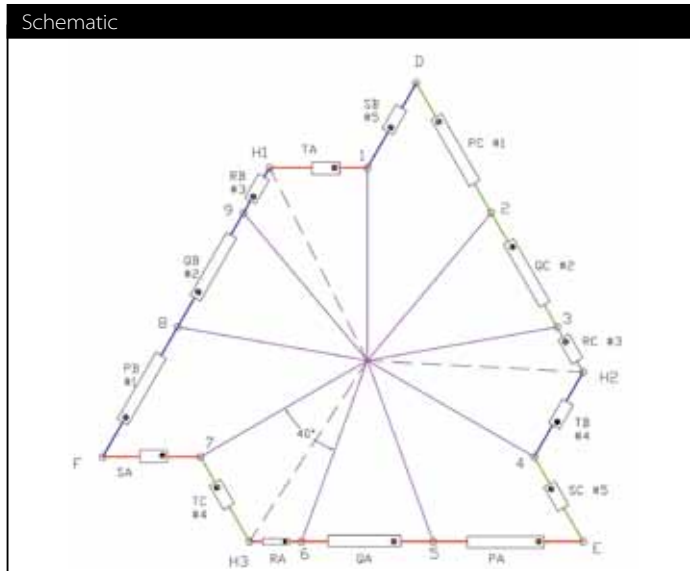
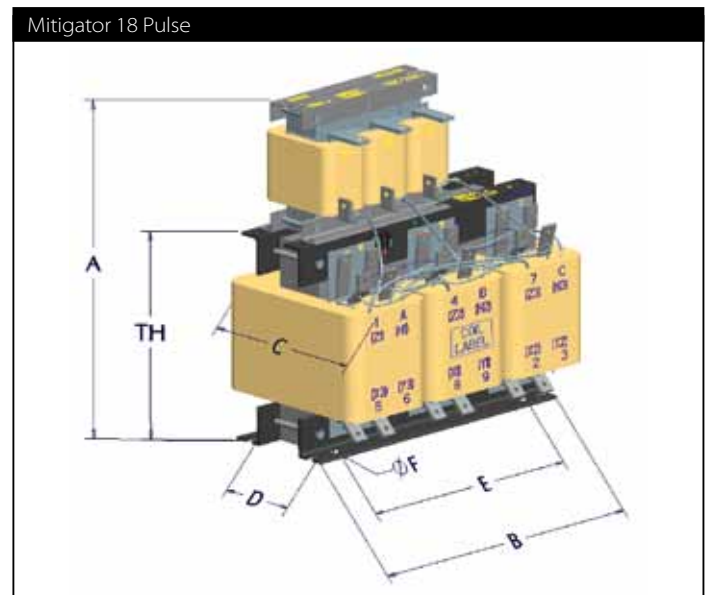
HP Rating	KVA	Assy#	Mat'l	Height (TH)	Height (A)	Width (B)	Depth (C)	MP D (D)	MP W (E)	MP H (F)	Term Type LR, T	Weight (lbs)	Air Flow Req'd (LFM)	Watts Loss
				Physical Size (inches)				Mounting Pattern (inches)						
5	5	TR-21602	AL/CU	11.00	15.13	13.19	7.75	4.50	12.00	.281 x .577 Slot	Term/Bus	85	300	159
10	10	TR-21605	AL/CU	14.13	18.50	14.00	8.00	5.25	12.88	.438 x .563 Slot	Term/Bus	128	300	270
15	15	TR-21608	AL/CU	15.25	20.38	16.00	8.90	5.00	11.00	.438 Hole	Term/Ring	175	300	363
20	20	TR-21007	AL/CU	14.61	19.38	17.13	7.00	6.50	10.50	.438 x .75 Slot	Term/Ring	225	300	740
30	30	TR-20409	AL/CU	17.20	24.13	18.00	12.13	8.00	12.00	.438 x .75 Slot	Term/Ring	325	300	700
40	40	TR-20412	AL	13.500	21.850	20.125	11.542	5.500	16.000	.562 x 1.0 Slot	a	315	300	1251
50	50	TR-20415	AL	17.00	25.350	19.125	11.417	5.750	14.000	.562 Hole	a	375	300	1369
60	60	TR-20418	AL	16.500	24.900	19.375	11.716	6.500	14.000	.562 Hole	a	375	300	1616
75	75	TR-20421	AL	16.500	27.750	19.125	12.002	6.875	16.125	.562 Hole	a	415	300	1788
100	99	TR-20424	AL	19.500	30.750	22.875	12.777	6.500	18.000	.562 x 1.0 Slot	a	530	300	2218
125	124	TR-20427	AL	21.000	31.750	21.625	12.091	7.500	16.000	.562 Hole	a	550	300	3021
150	149	TR-20430	AL	20.750	31.376	22.437	14.402	7.625	19.625	.562 Hole	b	650	300	3535
200	199	TR-20433	AL	22.000	33.250	28.589	14.539	8.000	24.000	.562 Hole	b	760	300	4375
250	249	TR-20436	AL	23.250	34.563	28.057	14.340	8.500	24.000	.656 x 1.0" Slot	c, b	900	300	4434
300	298	TR-20439	AL	26.250	38.563	26.383	15.575	9.000	24.000	.656 x 1.0" Slot	c	1.075	300	4898
350	348	TR-20442	AL	26.250	38.563	27.077	17.000	10.000	24.000	.656 x 1.0" Slot	e, c	1.200	500	6129
400	398	TR-20445	AL	26.500	40.375	29.203	17.468	10.000	25.000	.656 x 1.0" Slot	e, c	1.400	500	6643
450	448	TR-20448	AL	27.750	41.125	28.637	18.823	10.000	24.000	.656 Hole	e, d	1.450	500	7046
500	497	TR-20451	AL	28.250	41.750	30.611	21.154	10.000	28.000	.812 x 1.0" Slot	f, e	2.000	500	7772
600	597	TR-20454	AL	29.250	42.750	33.299	21.647	10.500	28.000	.656 x 1.25" Slot	f, e	1.800	500	8193
700	696	TR-20457	AL	28.875	45.375	34.596	22.955	11.500	28.000	.656 Hole	h, f	1.800	500	9018
800	796	TR-20460	CU	25.875	44.375	32.218	25.257	14.000	28.000	.812 Hole	h, g	2.350	500	8088

\*TH = Autotransformers Height Alone

### Termination Type Table

Type	Material	Thick (in)	Width (in)	Dia (in)
a	AL Bus Bar	.250	1.00	.281
b	AL Bus Bar	.250	1.00	.438
c	AL Bus Bar	.250	1.50	.438
d	AL Bus Bar	.250	2.00	.438
e	AL Bus Bar	.375	1.50	.438
f	AL Bus Bar	.375	2.00	.438
g	CU Bus Bar	.375	2.00	.438
h	AL Bus Bar	.375	2.50	.438

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