

Low Temperature Rise

SolaHD low temperature rise transformers feature a 220°C insulation system and temperature rise of only 80°C or 115°C under full nameplate load. The result is 13-21% lower operating losses than conventional 150°C rise units. Reduction in temperature rise increases reliability.

The 35°C thermal reserve on 115°C rise units and 70°C reserve on 80°C rise units definitely mean higher reliability. The extra benefit is being able to operate either of these transformers as a 150°C rise unit and have a short term overload capacity of 15-30% without compromising normal life expectancy (See Figure 2).

Low temperature rise transformers are designed for any critical application requiring extra overload capability, lower than average total losses and/or cooler operating temperatures. All are available with either a 115°C or 80°C thermal rise and a Class 220°C insulation system.



Accessories and Optional Design Styles

- Wall mounting brackets (500 lbs maximum) (Item WB1C)
- Weather Shields (UL-3R)*
- Stainless Steel Enclosures
- Totally enclosed non-ventilated designs (TENV) (Non UL)
- Open core and coil designs (UL Recognized)
- Copper Wound designs
- Compliant to NEMA TP-1 standards

* Not all optional designs are UL listed. Contact Technical Services.

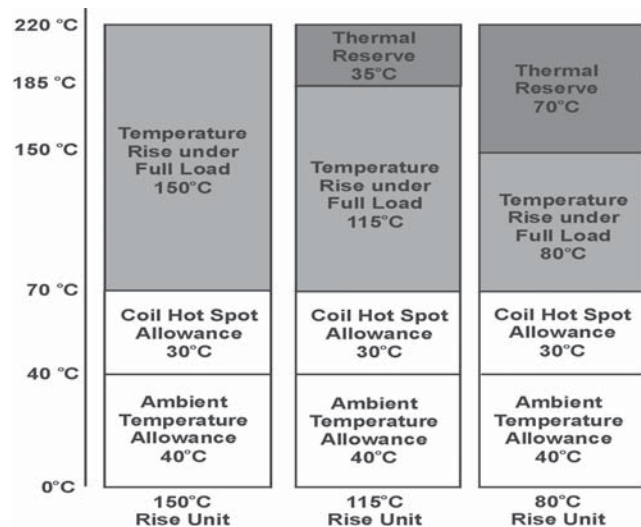


Figure 2

Selection Tables: Low Temperature Rise, Single Phase, 80°C Rise

Group 1: 240 x 480 Volt Primary, 120/240 Secondary, 60 Hz, 80°C Rise



kVA	Catalog Number 80°C Rise	NEMA 3R Weather Shield*	Height (inch)	Width (inch)	Depth (inch)	Approx. Ship Weight (lbs)	Design Style**	Elec Conn**	Primary Amps	Secondary Amps
15	ES5HB15S	WS-15	28	16	16	265	1	1	62.5/31.3	125/62.5
25	ES5HB25S	WS-17	31	18	18	340	1	1	104/52.1	208/104
37.5	ES5HB37S	WS-17	31	18	18	425	1	1	156/78	313/156
50	ES5HB50S	WS-09	44	23	21	655	1	1	208/104	416/208
75	ES5HB75S	WS-09	44	23	21	750	1	1	313/156	625/313
100	ES5HB100S	WS-16	46	26	24	980	1	1	417/208	833/417

Notes:

* Weather shields (set of two) must be ordered separately.

**Design Style and Electrical Connections can be found on pages 204-205.

Selection Tables: Low Temperature Rise, Single Phase, 80°C Rise

Group 2: 600 Volt Primary, 120/240 Secondary, 60 Hz, 80°C Rise



kVA	Catalog Number 80°C Rise	NEMA 3R Weather Shield*	Height (inch)	Width (inch)	Depth (inch)	Approx. Ship Weight (lbs)	Design Style**	Elec Conn**	Primary Amps	Secondary Amps
15	ES10HB15S	WS-15	28	16	16	265	1	4	25.0	125/62.5
25	ES10HB25S	WS-17	31	18	18	340	1	4	41.7	208/104
37.5	ES10HB37S	WS-17	31	18	18	425	1	4	62.5	313/156
50	ES10HB50S	WS-09	44	23	21	655	1	4	83.3	416/208
75	ES10HB75S	WS-09	44	23	21	750	1	4	125.0	625/313
100	ES10HB100S	WS-16	46	26	24	980	1	4	167.0	833/417

Selection Tables: Low Temperature Rise, Three Phase, 80°C Rise

Group A: 480 Δ Primary, 208Y/120 Secondary, 60 Hz, 80°C Rise



kVA	Catalog Number 80°C Rise	NEMA 3R Weather Shield*	Height (inch)	Width (inch)	Depth (inch)	Approx. Ship Weight (lbs)	Design Style**	Elec Conn**	Primary Amps	Secondary Amps
15	ET2HB15S	WS-14	28	23	16	292	1	5	18.1	41.7
30	ET2HB30S	WS-14	28	23	16	376	1	5	36.1	83.4
45	ET2HB45S	WS-30	34	28	22	569	1	5	54.2	125.0
75	ET2HB75S	WS-30	34	28	22	768	1	5	90.3	208.0
112.5	ET2HB112S	WS-10	44	33	21	933	1	5	135.0	313.0
150	ET2HB150S	WS-11	46	36	24	1342	1	5	181.0	417.0
225	ET2HB225S	WS-11	46	36	24	1525	1	5	271.0	625.0
300	ET2HB300S	WS-12	65	45	35	2460	1	5	361.0	834.0

Group B: 480 Δ Primary, 240 Δ Secondary with 120V Reduced Capacity Center Tap***, 80°C Rise



kVA	Catalog Number 80°C Rise	NEMA 3R Weather Shield*	Height (inch)	Width (inch)	Depth (inch)	Approx. Ship Weight (lbs)	Design Style**	Elec Conn**	Primary Amps	Secondary Amps
15	ET5HB15S	WS-14	28	23	16	292	1	6	18.1	36.1
30	ET5HB30S	WS-14	28	23	16	381	1	6	36.1	72.3
45	ET5HB45S	WS-30	34	28	22	580	1	6	54.2	108.0
75	ET5HB75S	WS-30	34	28	22	760	1	6	90.3	181.0
112.5	ET5HB112S	WS-10	44	33	21	940	1	6	135.0	271.0
150	ET5HB150S	WS-11	46	36	24	1342	1	6	181.0	361.0
225	ET5HB225S	WS-11	46	36	24	1525	1	6	271.0	542.0
300	ET5HB300S	WS-12	65	45	35	2460	1	6	361.0	723.0

Notes:

* Weather shields (set of two) must be ordered separately.

**Design Style and Electrical Connections can be found on pages 204-205.

***See the Technical Notes section with respect to capacity of center tap.

Selection Tables: Low Temperature Rise, Single Phase, 115°C Rise

Group 1: 240 x 480 Volt Primary, 120/240 Secondary, 60 Hz, 115°C Rise



kVA	Catalog Number 115°C Rise	NEMA 3R Weather Shield*	Height (inch)	Width (inch)	Depth (inch)	Approx. Ship Weight (lbs)	Design Style**	Elec Conn**	Primary Amps	Secondary Amps
15	ES5HF15S	WS-15	28	16	16	210	1	1	62.5/31.3	125/62.5
25	ES5HF25S	WS-15	28	16	16	245	1	1	104/52.1	208/104
37.5	ES5HF37S	WS-17	31	18	18	340	1	1	156/78	313/156
50	ES5HF50S	WS-17	31	18	18	425	1	1	208/104	416/208
75	ES5HF75S	WS-09	44	23	21	610	1	1	313/156	625/313
100	ES5HF100S	WS-09	44	23	21	750	1	1	417/208	833/417

Group 2: 600 Volt Primary, 120/240 Secondary, 60 Hz, 115°C Rise



kVA	Catalog Number 115°C Rise	NEMA 3R Weather Shield*	Height (inch)	Width (inch)	Depth (inch)	Approx. Ship Weight (lbs)	Design Style**	Elec Conn**	Primary Amps	Secondary Amps
15	ES10HF15S	WS-15	28	16	16	175	1	4	25	125/62.5
25	ES10HF25S	WS-15	28	16	16	265	1	4	41.7	208/104
37.5	ES10HF37S	WS-17	31	18	18	340	1	4	62.5	313/156
50	ES10HF50S	WS-17	31	18	18	425	1	4	83.3	416/208
75	ES10HF75S	WS-09	44	23	21	655	1	4	125	625/313
100	ES10HF100S	WS-09	44	23	21	750	1	4	167	833/417

Notes:

* Weather shields (set of two) must be ordered separately.

**Design Style and Electrical Connections can be found on pages 204-205.

Selection Tables: Low Temperature Rise, Three Phase, 115°C Rise

Group A: 480 Δ Primary, 208Y/120 Secondary, 60 Hz, 115°C Rise



kVA	Catalog Number 115°C Rise	NEMA 3R Weather Shield*	Height (inch)	Width (inch)	Depth (inch)	Approx. Ship Weight (lbs)	Design Style**	Elec Conn**	Primary Amps	Secondary Amps
15	ET2HF15S	WS-02	23	18	14	187	1	5	18.1	41.7
30	ET2HF30S	WS-14	28	23	16	292	1	5	36.1	83.4
45	ET2HF45S	WS-14	28	23	16	378	1	5	54.2	125.0
75	ET2HF75S	WS-30	34	28	22	569	1	5	90.3	208.0
112.5	ET2HF112S	WS-30	34	28	22	768	1	5	135.0	313.0
150	ET2HF150S	WS-10	44	33	21	933	1	5	181.0	417.0
225	ET2HF225S	WS-11	46	36	24	1342	1	5	271.0	625.0
300	ET2HF300S	WS-11	46	36	24	1525	1	5	361.0	834.0

Group B: 480 Volt Δ Primary, 240 Volt Δ, Secondary with reduced capacity center tap, 60 Hz, 115°C Rise



kVA	Catalog Number	NEMA 3R Weather Shield**	Height (inch)	Width (inch)	Depth (inch)	Approx. Ship Weight (lbs)	Design Style**	Elec Conn**	Primary Amps	Secondary Amps
15	ET5HF15S	WS-02	23	19	14	189	1	6	18.1	36.1
30	ET5HF30S	WS-14	28	23	16	292	1	6	36.1	72.3
45	ET5HF45S	WS-14	28	23	16	381	1	6	54.2	108.0
75	ET5HF75S	WS-30	34	28	22	560	1	6	90.3	181.0
112.5	ET5HF112S	WS-30	34	28	22	760	1	6	135.0	271.0
150	ET5HF150S	WS-10	44	33	21	940	1	6	181.0	361.0
225	ET5HF225S	WS-11	46	36	24	1342	1	6	271.0	542.0
300	ET5HF300S	WS-11	46	36	24	1525	1	6	361.0	723.0

Notes:

* Weather shields (set of two) must be ordered separately.

**Design Style and Electrical Connections can be found on pages 204-205.

***See the Technical Notes section with respect to capacity of center tap.