

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 Listed/NEMA Type 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

Certifications and Compliances

- Listed: E25872
- UL 1561

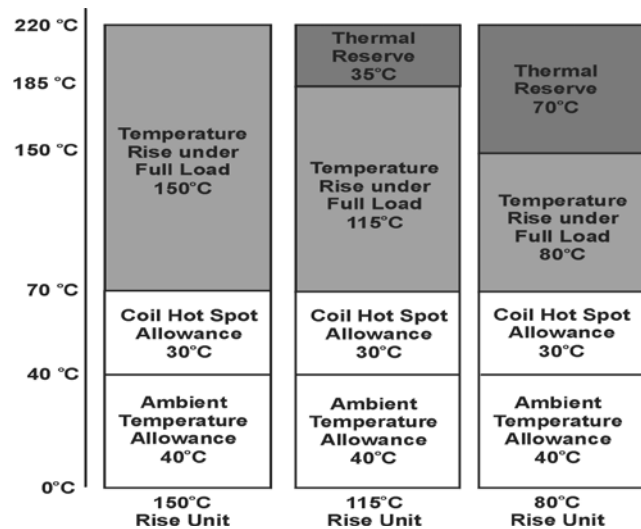


Figure 2

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	Type 3R Weather Shield ¹	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)	Design Style ²	Elec Conn ²	Primary Amps	Secondary Amps
15	ES5HB15S	WS-15	28.00 (711.2)	16.00 (406.4)	16.00 (406.4)	265.0 (120.20)	1	1	62.5/31.3	125/62.5
25	ES5HB25S	WS-17	31.00 (787.4)	18.00 (457.2)	18.00 (457.2)	340.0 (154.22)	1	1	104/52.1	208/104
37.5	ES5HB37S	WS-17	31.00 (787.4)	18.00 (457.2)	18.00 (457.2)	425.0 (192.78)	1	1	156/78	313/156
50	ES5HB50S	WS-09	44.00 (1117.6)	23.00 (584.2)	21.00 (533.4)	655.0 (297.10)	1	1	208/104	416/208
75	ES5HB75S	WS-09	44.00 (1117.6)	23.00 (584.2)	21.00 (533.4)	750.0 (340.19)	1	1	313/156	625/313
100	ES5HB100S	WS-16	46.00 (1168.4)	26.00 (660.4)	24.00 (609.6)	980.0 (444.52)	1	1	417/208	833/417

Notes:

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

2. Design Styles and Electrical Connections can be found at the end of the Ventilated Distribution Transformers section.

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

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	Type 3R Weather Shield ¹	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)	Design Style ²	Elec Conn ²	Primary Amps	Secondary Amps
15	ET2HB15S	WS-14	28.00 (711.2)	23.00 (584.2)	16.00 (406.4)	292.0 (132.45)	1	5	18.1	41.7
30	ET2HB30S	WS-14	28.00 (711.2)	23.00 (584.2)	16.00 (406.4)	376.0 (170.55)	1	5	36.1	83.4
45	ET2HB45S	WS-30	34.00 (863.6)	28.00 (711.2)	22.00 (558.8)	569.0 (258.09)	1	5	54.2	125.0
75	ET2HB75S	WS-30	34.00 (863.6)	28.00 (711.2)	22.00 (558.8)	768.0 (348.36)	1	5	90.3	208.0
112.5	ET2HB112S	WS-10	44.00 (1117.6)	33.00 (838.2)	21.00 (533.4)	933.0 (423.20)	1	5	135.0	313.0
150	ET2HB150S	WS-11	46.00 (1168.4)	36.00 (914.4)	24.00 (609.6)	1342.0 (608.72)	1	5	181.0	417.0
225	ET2HB225S	WS-11	46.00 (1168.4)	36.00 (914.4)	24.00 (609.6)	1525.0 (691.73)	1	5	271.0	625.0
300	ET2HB300S	WS-12	65.00 (1651.0)	45.00 (1143.0)	35.00 (889.0)	2460.0 (1115.84)	1	5	361.0	834.0

Group B: 480 Δ Primary, 240 Δ Secondary with 120V Reduced Capacity Center Tap ³, 80°C Rise

kVA	Catalog Number 80°C Rise	Type 3R Weather Shield ¹	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)	Design Style ²	Elec Conn ²	Primary Amps	Secondary Amps
15	ET5HB15S	WS-14	28.00 (711.2)	23.00 (584.2)	16.00 (406.4)	292.0 132.45	1	6	18.1	36.1
30	ET5HB30S	WS-14	28.00 (711.2)	23.00 (584.2)	16.00 (406.4)	381.0 (172.82)	1	6	36.1	72.3
45	ET5HB45S	WS-30	34.00 (863.6)	28.00 (711.2)	22.00 (558.8)	580.0 (263.08)	1	6	54.2	108.0
75	ET5HB75S	WS-30	34.00 (863.6)	28.00 (711.2)	22.00 (558.8)	760.0 (344.73)	1	6	90.3	181.0
112.5	ET5HB112S	WS-10	44.00 (1117.6)	33.00 (838.2)	21.00 (533.4)	940.0 (426.38)	1	6	135.0	271.0
150	ET5HB150S	WS-11	46.00 (1168.4)	36.00 (914.4)	24.00 (609.6)	1342.0 (608.72)	1	6	181.0	361.0
225	ET5HB225S	WS-11	46.00 (1168.4)	36.00 (914.4)	24.00 (609.6)	1525.0 (691.73)	1	6	271.0	542.0
300	ET5HB300S	WS-12	65.00 (1651.0)	45.00 (1143.0)	35.00 (889.0)	2460.0 (1115.84)	1	6	361.0	723.0

Notes:

1. Weather shields (set of two) must be ordered separately.
2. Design Styles and Electrical Connections can be found at the end of the Ventilated Distribution Transformers section.
3. Refer to *Capacity of Center Tap in Center Tap Delta Transformers* at the beginning of this section.

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	Type 3R Weather Shield ¹	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)	Design Style ²	Elec Conn ²	Primary Amps	Secondary Amps
15	ES5HF15S	WS-15	28.00 (711.2)	16.00 (406.4)	16.00 (406.4)	210.0 (95.25)	1	1	62.5/31.3	125/62.5
25	ES5HF25S	WS-15	28.00 (711.2)	16.00 (406.4)	16.00 (406.4)	245.0 (111.13)	1	1	104/52.1	208/104
37.5	ES5HF37S	WS-17	31.00 (787.4)	18.00 (457.2)	18.00 (457.2)	340.0 (154.22)	1	1	156/78	313/156
50	ES5HF50S	WS-17	31.00 (787.4)	18.00(457.2)	18.00 (457.2)	425.0 (192.78)	1	1	208/104	416/208
75	ES5HF75S	WS-09	44.00 (1117.6)	23.00 (584.2)	21.00 (533.4)	610.0 (276.69)	1	1	313/156	625/313
100	ES5HF100S	WS-09	44.00 (1117.6)	23.00 (584.2)	21.00 (533.4)	750.0 (340.19)	1	1	417/208	833/417

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	Type 3R Weather Shield ¹	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)	Design Style ²	Elec Conn ²	Primary Amps	Secondary Amps
15	ET2HF15S	WS-02	23.00 (584.2)	18.00 (457.2)	14.00 (355.6)	187.0 (84.82)	1	5	18.1	41.7
30	ET2HF30S	WS-14	28.00 (711.2)	23.00 (584.2)	16.00 (406.4)	292.0 (132.45)	1	5	36.1	83.4
45	ET2HF45S	WS-14	28.00 (711.2)	23.00 (584.2)	16.00 (406.4)	378.0 (171.46)	1	5	54.2	125.0
75	ET2HF75S	WS-30	34.00 (863.6)	28.00 (711.2)	22.00 (558.8)	569.0 (258.09)	1	5	90.3	208.0
112.5	ET2HF112S	WS-30	34.00 (863.6)	28.00 (711.2)	22.00 (558.8)	768.0 (348.36)	1	5	135.0	313.0
150	ET2HF150S	WS-10	44.00 (1117.6)	33.00 (838.2)	21.00 (533.4)	933.0 (423.20)	1	5	181.0	417.0
225	ET2HF225S	WS-11	46.00 (1168.4)	36.00 (914.4)	24.00 (609.6)	1342.0 (608.72)	1	5	271.0	625.0
300	ET2HF300S	WS-11	46.00 (1168.4)	36.00 (914.4)	24.00 (609.6)	1525.0 (691.73)	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	Type 3R Weather Shield ¹	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)	Design Style ²	Elec Conn ²	Primary Amps	Secondary Amps
15	ET5HF15S	WS-02	23.00 (584.2)	19.00 (482.6)	14.00 (355.6)	189.0 (85.73)	1	6	18.1	36.1
30	ET5HF30S	WS-14	28.00 (711.2)	23.00 (584.2)	16.00 (406.4)	292.0 (132.45)	1	6	36.1	72.3
45	ET5HF45S	WS-14	28.00 (711.2)	23.00 (584.2)	16.00 (406.4)	381.0 (172.82)	1	6	54.2	108.0
75	ET5HF75S	WS-30	34.00 (863.6)	28.00 (711.2)	22.00 (558.8)	560.0 (254.01)	1	6	90.3	181.0
112.5	ET5HF112S	WS-30	34.00 (863.6)	28.00 (711.2)	22.00 (558.8)	760.0 (344.73)	1	6	135.0	271.0
150	ET5HF150S	WS-10	44.00 (1117.6)	33.00 (838.2)	21.00 (533.4)	940.0 (426.38)	1	6	181.0	361.0
225	ET5HF225S	WS-11	46.00 (1168.4)	36.00 (914.4)	24.00 (609.6)	1342.0 (608.72)	1	6	271.0	542.0
300	ET5HF300S	WS-11	46.00 (1168.4)	36.00 (914.4)	24.00 (609.6)	1525.0 (691.73)	1	6	361.0	723.0

Notes:

- Weather shields (set of two) must be ordered separately.
- Design Styles and Electrical Connections can be found at the end of the Ventilated Distribution Transformers section.