HSZ Series Industrial Control Transformers

The SolaHD HSZ Series is for applications where cost or heat issues make mounting the transformer outside the control panel necessary. This series has 80°C rise and have copper winding for industrial applications.



c UL us
E77014

Features

- UL Class I80°C insulation system, 80°C temperature rise under full load
- Meets or exceeds NEMA regulation standards
- Copper windings
- Encapsulated
- Standard enclosure styles available:
  - UL Listed/NEMA Type 3R (rain proof)
  - UL Listed/NEMA Type 4 (wash down and dust proof)
  - UL Listed/NEMA Type 4X (corrosion proof, painted stainless steel)

Optional Styles

- Other UL Listed/NEMA Type 4X (corrosion proof) enclosure styles available (contact Technical Support for details):
  - Passivated Stainless Steel
  - 316 Stainless Steel

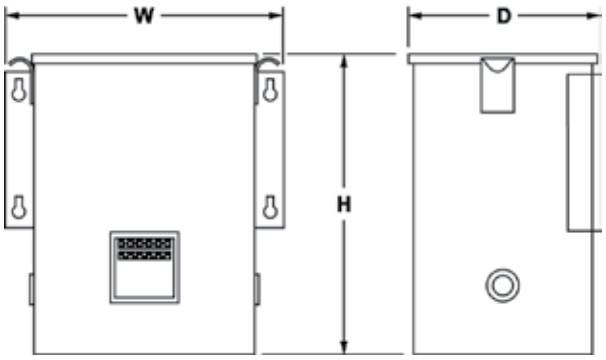
Certifications and Compliances

- c UL us Listed: E77014 - Type HSZ
  - UL 5085-1, UL 5085-2
  - CSA C22.2 No. 66.1, No. 66.2
- RoHS Compliant

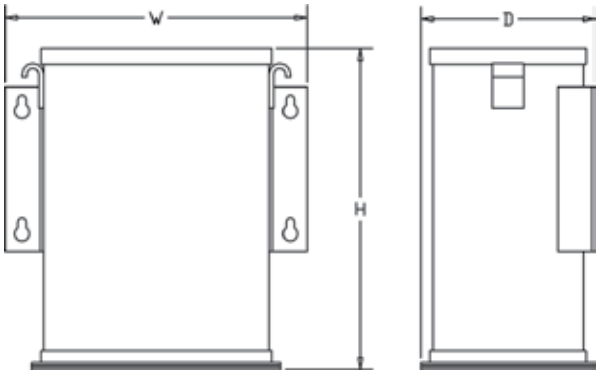
Related Products

- DIN Rail DC Power Supplies
- Constant Voltage Transformers

Design Style 1 - Type 3R



Design Style 2 - Type 4, Type 4X, Type 12



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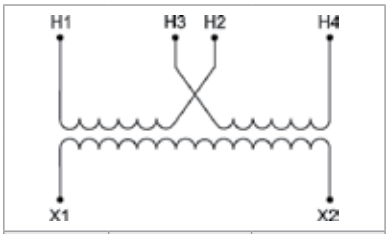
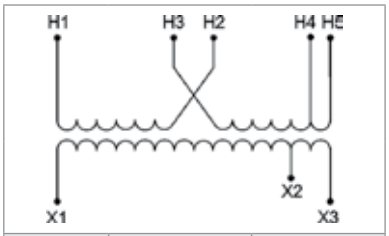
HSZ Series Selection Tables and Electrical Connections



Primary Voltage	Interconnect	Connect Lines to
480	H2-H3	H1 & H4
240	H1-H3, H2-H4	H1 & H4
Secondary Voltage	**Interconnect**	**Connect Lines to**
120	—	X1 & X2

Group 1 – 240/480, 230/460, 220/440 Volt Primary, 120/115/110 Volt Secondary, 50/60 Hz

kVA	Catalog Number Type–3R	Catalog Number Type–4/12	Catalog Number Type–4X	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)
1	**HZ1000**	**HZ12–1000**	**HZP4X–1000**	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	43.0 (19.55)
1.5	**HZ1500**	**HZ12–1500**	**HZP4X–1500**	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	55.0 (25.00)
2	**HZ2000**	**HZ12–2000**	**HZP4X–2000**	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	68.0 (30.91)
3	**HZ3000**	**HZ12–3000**	**HZP4X–3000**	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	108.0 (49.09)
5	**HZ5000**	**HZ12–5000**	**HZP4X–5000**	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	138.0 (62.73)
7.5	**HZ7500**	**HZ12–7500**	**HZP4X–7500**	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	173.0 (78.64)
10	**HZ10000**	**HZ12–10000**	**HZP4X–10000**	17.00 (431.8)	17.00 (431.8)	12.00 (304.8)	210.0 (95.45)



Primary Voltage	Interconnect	Connect Lines to
230	H1-H3, H2-H4	H1 & H4
460	H2-H3	H1 & H4
575	H2-H3	H1 & H5
Secondary Voltage	**Interconnect**	**Connect Lines to**
115	—	X1 & X3
95		X1 & X2

Group 2 – 230/460/575 Volt Primary, 115/95 Volt Secondary, 50/60 Hz

kVA	Catalog Number Type–3R	Catalog Number Type–4/12	Catalog Number Type–4X	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)
1	**HZ1000A**	**HZ12–1000A**	**HZP4X–1000A**	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	43.0 (19.55)
1.5	**HZ1500A**	**HZ12–1500A**	**HZP4X–1500A**	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	55.0 (25.00)
2	**HZ2000A**	**HZ12–2000A**	**HZP4X–2000A**	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	68.0 (30.91)
3	**HZ3000A**	**HZ12–3000A**	**HZP4X–3000A**	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	108.0 (49.09)
5	**HZ5000A**	**HZ12–5000A**	**HZP4X–5000A**	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	138.0 (62.73)
7.5	**HZ7500A**	**HZ12–7500A**	**HZP4X–7500A**	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	173.0 (78.64)
10	**HZ10000A**	**HZ12–10000A**	**HZP4X–10000A**	17.00 (431.8)	17.00 (431.8)	12.00 (304.8)	210.0 (95.45)

Note: Contact Technical Services for lead times, or for other enclosure types.

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HSZ Series Selection Tables and Electrical Connections

Group 3 – 480 Volt Primary, 240 Volt Secondary, 50/60 Hz

kVA	Catalog Number Type–3R	Catalog Number Type–4/12	Catalog Number Type–4X	Height in (mm)	Width in (mm)	Depth in (mm)	Approx. Ship Weight lbs (kg)
1	**HZ1000R**	**HZ12–1000R**	**HZP4X–1000R**	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	43 (19.55)
1.5	**HZ1500R**	**HZ12–1500R**	**HZP4X–1500R**	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	55 (25.00)
2	**HZ2000R**	**HZ12–2000R**	**HZP4X–2000R**	12.00 (304.8)	10.00 (254.0)	7.00 (177.8)	68 (30.91)
3	**HZ3000R**	**HZ12–3000R**	**HZP4X–3000R**	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	108 (49.09)
5	**HZ5000R**	**HZ12–5000R**	**HZP4X–5000R**	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	138 (62.73)
7.5	**HZ7500R**	**HZ12–7500R**	**HZP4X–7500R**	17.00 (431.8)	14.00 (355.6)	9.00 (228.6)	173 (78.64)
10	**HZ10000R**	**HZ12–10000R**	**HZP4X–10000R**	17.00 (431.8)	17.00 (431.8)	12.00 (304.8)	210 (95.45)



Primary Voltage	Interconnect	Connect Lines to
480	—	H1 & H2
Secondary Voltage	**Interconnect**	**Connect Lines to**
240	—	X1 & X2

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Primary Fuse Recommendations

Primary Voltage													
V_{in}	120	200	208	220	230	240	277	440	460	480	550	575	600
VA													
50	1.25 (2)	.75 (1.25)	.6 (1.13)	.6 (1.13)	.6 (1)	.6 (1)	.5 (.8)	.3 (.5)	.3 (.5)	.3 (.5)	.25 (.4)	.25 (.4)	.25 (.4)
75	1.8 (3)	1.13 (1.8)	1 (1.8)	1 (1.6)	.8 (1.6)	.8 (1.5)	.8 (1.25)	.5 (.8)	.4 (.8)	.4 (.75)	.4 (.6)	.3 (.6)	.3 (.6)
100	2.5 (4)	1.5 (2.5)	1.4 (2.25)	1.25 (2.25)	1.25 (2)	1.25 (2)	1 (1.8)	.6 (1.13)	.6 (1)	.6 (1)	.5 (.8)	.5 (.8)	.5 (.8)
150	3.5 (6.25)	2.25 (3.5)	2 (3.5)	2 (3.2)	1.8 (3.2)	1.8 (3)	1.6 (2.5)	1 (1.6)	.8 (1.6)	.8 (1.5)	.8 (1.25)	.75 (1.25)	.75 (1.25)
200	5 (8)	3 (5)	2.8 (4.5)	2.5 (4.5)	2.5 (4)	2.5 (4)	2 (3.5)	1.25 (2.25)	1.25 (2)	1.25 (2)	1 (1.8)	1 (1.5)	1 (1.6)
250	3 (5)	3.5 (6.25)	3.5 (6)	3.2 (5.6)	3.2 (5)	3 (5)	2.5 (4.5)	1.6 (2.8)	1.6 (2.5)	1.5 (2.5)	1.25 (2.25)	1.25 (2)	1.25 (2)
300	4 (6.25)	4.5 (7.5)	4 (7)	4 (6.25)	3.5 (6.25)	3.5 (6.25)	3.2 (5)	2 (3.2)	1.8 (3.2)	1.8 (3)	1.6 (2.5)	1.5 (2.5)	1.5 (2.5)
350	4.5 (7)	5 (8)	5 (8)	4.5 (7.5)	4.5 (7.5)	4 (7)	3.5 (6.25)	2.25 (3.5)	2.25 (3.5)	2 (3.5)	1.8 (3)	1.8 (3)	1.75 (2.5)
500	6.25 (10)	4 (6.25)	4 (6)	3.5 (5.6)	3.5 (5)	3 (5)	5 (9)	3.2 (5.6)	3.2 (5)	3 (5)	2.5 (4.5)	2.5 (4)	2.5 (4)
750	10 (15)	6.25 (9)	6 (9)	5.6 (8)	5 (8)	5 (7.5)	8 (12)	5 (8)	4.5 (8)	4.5 (7.5)	4 (6.25)	3.5 (6.25)	3.5 (6.25)
1000	12 (20)	8 (12)	8 (12)	7.5 (10)	7 (10)	6.25 (10)	10 (17.5)	3.5 (5.6)	3.6 (5)	3 (5)	5 (9)	5 (8)	5 (8)
1500	17.5 (30)	12 (15)	12 (15)	10 (15)	10 (15)	10 (15)	15 (25)	5.6 (8)	5 (8)	5 (7.5)	4.5 (6.25)	4.5 (6.25)	4.5 (6.25)
2000	25 (40)	15 (25)	15 (20)	15 (20)	12 (20)	12 (20)	20 (35)	7.5 (10)	7 (10)	6.25 (10)	6 (9)	5.6 (8)	5 (8)
3000	35 (60)	20 (35)	20 (35)	17.5 (30)	17.5 (30)	20 (30)	35 (50)	10 (15)	10 (15)	10 (15)	9 (12)	8 (12)	8 (12)
5000	60 (100)	35 (60)	30 (60)	30 (50)	30 (50)	30 (50)	60 (90)	15 (25)	15 (25)	15 (25)	12 (20)	12 (20)	12 (20)
7500	80 (150)	50 (90)	45 (90)	45 (80)	45 (80)	40 (70)	90 (125)	25 (40)	25 (40)	20 (35)	20 (30)		
10K	110 (200)	70 (125)	60 (110)	60 (110)	60 (110)	60 (100)	110 (175)	30 (50)	30 (50)	30 (50)	25 (45)		
15K	175 (300)	100 (175)	90 (175)	90 (150)	90 (150)	80 (150)	175 (250)	45 (80)	45 (80)	40 (70)	35 (60)		
25K	300 (500)	175 (300)	150 (300)	150 (250)	150 (250)	150 (250)	90 (250)	60 (70)	70 (125)	70 (125)	60 (110)		
37K						200 (350)				100 (175)			80 (150)
50K						300 (500)				150 (250)			110 (200)
75K						400 (750)				200 (350)			175 (300)
100K						600 (1000)				300 (500)			225 (400)
167K						900 (1600)				450 (850)			350 (650)

Fuse = I times 300% next size smaller if primary current is less than 2 amp. No secondary fusing required.
*(Fuse) = (I*500%) next size smaller if used for a motor control circuit per NEC 430.72 (C) (4).*

Fuse = I times 167% next size smaller if primary current is less than 9 amp. No secondary fusing required.
(Fuse) = (I times 250%) next size smaller if primary current is less than 9 Amps. Secondary fusing is required see chart for size.

Fuse = I times 125% next size higher if primary current is 9 amp. or higher. No secondary fusing required.
(Fuse) = (I times 250%) next size smaller if primary current is 9 Amps. or higher. Secondary fusing is required see chart for size.

Recommended fuse sizes per UL 508 and NEC 450.3 (B), NEC 430.72 and commercially available type fuses.

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