## 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

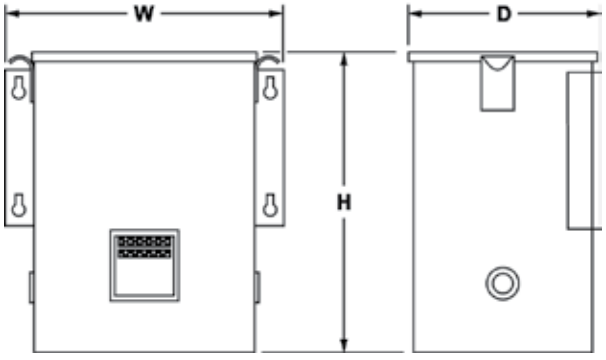
### Certifications and Compliances

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

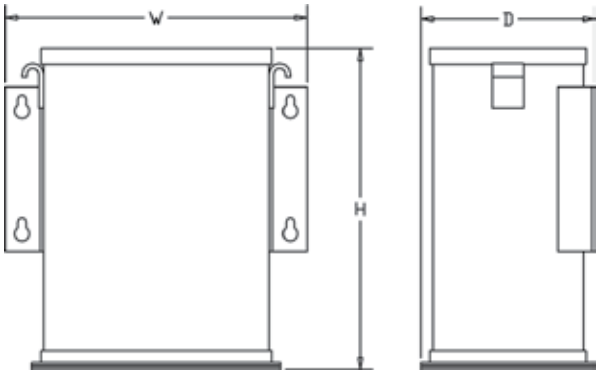
### Related Products

- 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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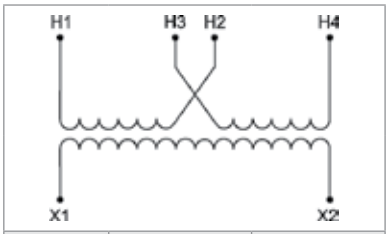
## HSZ Series Selection Tables and Electrical Connections

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

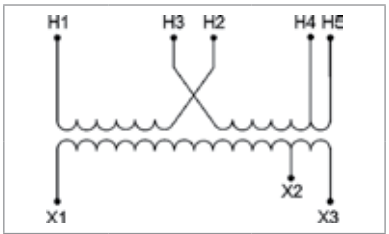
| kVA | Catalog Number Type–3R | Catalog Number Type–4/12 | Catalog Number Type–4X | Height in (mm) | Width in (mm) | Depth in (mm) | Approx. Ship Weight lbs (kg) |
|---|---|---|---|---|---|---|---|
| 1 | **HZ1000** | **HZ12–1000** | **HZP4X–1000** | 12.00 (304.8) | 10.00 (254.0) | 7.00 (177.8) | 43.0 (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 |
|---|---|---|
| 480 | H2-H3 | H1 & H4 |
| 240 | H1-H3, H2-H4 | H1 & H4 |
| **Secondary Voltage** | **Interconnect** | **Connect Lines to** |
| 120 | — | 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) |




| 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 |

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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# Mouser Electronics

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SolaHD:

HZP4X10000 HZP4X2000A HZP4X3000R HZP4X1000 HZP4X2000 HZP4X1000R HZP4X7500 HZP4X1500A HZP4X3000 HZP4X7500R HZP4X5000 HZP4X3000A HZP4X5000A HZP4X5000R HZP4X1500 HZP4X1500R HZP4X7500A HZP4X10000R HZP4X2000R HZP4X1000A HZ4X1000R