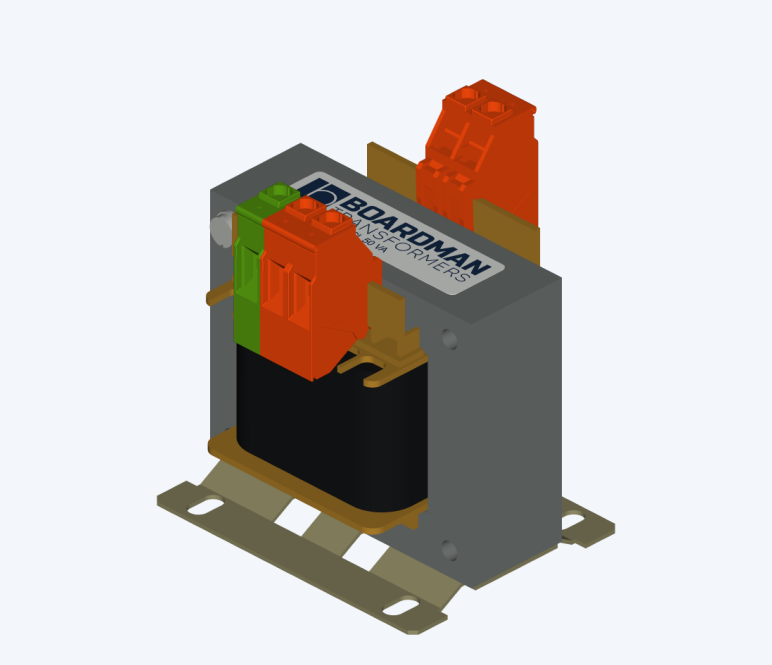
# CL1 control transformers

Class 1 isolation transformers with an earth screen between primary and secondary




## Technical specifications

| Item | Specification |
|---|---|
| Construction | Class 1 isolation; primary/secondary earth screen |
| Primary options | 0-110 V, 0-230 V or 0-400 V |
| Secondary options | 12 V, 24 V, 48 V, 110 V or 230 V |
| Frequency / insulation | 50/60 Hz / Class B |
| Ambient temperature | 40 degrees C |
| Insulation resistance | Greater than 5 megohms |
| Dielectric strength | Greater than 2.5 kV between windings and to earth |
| Standard | IEC / BS-EN 61558 |

BOARDMAN TRANSFORMERS

# Mechanical dimensions

Overall dimensions and mounting centres | All dimensions in millimetres

| Model / core x stack | Construction | A | B | C | D | E | Slots W x L | Weight (kg) |
|---|---|---|---|---|---|---|---|---|
| CL25 / 66x23 | Standard | 66 | 69.3 | 81.65 | 50 | 44.5 | 4.5 x 8 | 0.7 |
| CL50 / 75x26 | Standard | 75 | 72.6 | 86.7 | 56 | 47.5 | 4.8 x 9 | 1.1 |
| CL50 / 66x34 | Alternative | 66 | 81 | 81.65 | 50 | 55 | 4.5 x 8 | 1.1* |
| CL75 / 75x32 | Standard | 75 | 78.8 | 86.7 | 56 | 53.5 | 4.8 x 9 | 1.5 |
| CL75 / 84x29 | Alternative | 84 | 75.4 | 93.3 | 64 | 51.5 | 4.8 x 8 | 1.5* |
| CL100 / 84x43 | Standard | 84 | 89.4 | 93.3 | 64 | 63.5 | 4.8 x 8 | 2.1 |
| CL150 / 96x35 | Standard | 96 | 81.4 | 104.3 | 84 | 65.3 | 5.8 x 9 | 2.25 |
| CL200 / 96x45 | Standard | 96 | 91.4 | 104.3 | 84 | 72.6 | 5.8 x 9 | 2.8 |
| CL250 / 96x59 | Standard | 96 | 105.4 | 104.3 | 84 | 89.8 | 5.8 x 9 | 3.7 |
| CL300 / 120x41 | Standard | 120 | 92 | 121.55 | 90 | 73 | 5.8 x 12 | 4.4 |
| CL400 / 120x53 | Standard | 120 | 104 | 121.55 | 90 | 85 | 5.8 x 12 | 5.3 |
| CL500 / 120x73 | Standard | 120 | 124 | 121.55 | 90 | 106 | 5.8 x 12 | 6.5 |
| CL650 / 150x40 | Standard | 150 | 105 | 145.45 | 122 | 83 | 7 x 15 | 8* |
| CL750 / 150x49 | Standard | 150 | 112 | 145.45 | 122 | 90 | 7 x 15 | 8 |
| CL1000 / 150x66 | Standard | 150 | 127 | 145.45 | 122 | 104 | 7 x 15 | 10 |
| CL1500 / 150x92 | Standard | 150 | 155.4 | 145.45 | 122 | 134 | 7 x 15 | 14 |
| CL2000 / 192x80 | Frame mounted | 196 | 172 | 180 | 158 | 128 | 8.5 x 26 | 20.5 |
| CL2500 / 192x100 | Frame mounted | 196 | 200 | 180 | 158 | 155 | 8.5 x 26 | 24 |

* Published rating reference; next higher available weight used where required.

## Dimension key

A = overall width; B = overall depth, including terminals; C = overall height from the mounting surface.
D = transverse fixing-centre pitch; E = longitudinal fixing-centre pitch.
Slot dimensions are width x overall length. See the dimensioned drawings for mounting details.

BOARDMAN TRANSFORMERS

# Performance & ordering

Transformer ratings and voltage options

| Part | kg | Reg. % | Loss W | Inrush VA / 10% drop | Inrush VA / 5% drop |
|---|---|---|---|---|---|
| CL25 | 0.7 | 11 | 6 | 48 | 36 |
| CL50 | 1.1 | 9.8 | 9 | 105 | 77 |
| CL75 | 1.5 | 8.9 | 11 | 135 | 102 |
| CL100 | 2.1 | 8.4 | 14 | 250 | 175 |
| CL150 | 2.25 | 6.7 | 18 | 375 | 260 |
| CL200 | 2.8 | 5.8 | 21 | 550 | 375 |
| CL250 | 3.7 | 5.6 | 27 | 720 | 470 |
| CL300 | 4.4 | 5.3 | 31 | 870 | 585 |
| CL400 | 5.3 | 5 | 30 | 1200 | 790 |
| CL500 | 6.5 | 4.1 | 31 | 1700 | 1100 |
| CL750 | 8 | 5.2 | 60 | 2200 | 1475 |
| CL800 | 10 | 3.3 | 62 | 3500 | 2100 |
| CL1000 | 10 | 3.3 | 67 | 4000 | 2500 |
| CL1500 | 14 | 3.2 | 88 | 6200 | 3850 |
| CL2000 | 20.5 | 3.3 | 100 | 8060 | 5030 |
| CL2500 | 24 | 2.6 | 120 | 12100 | 7300 |

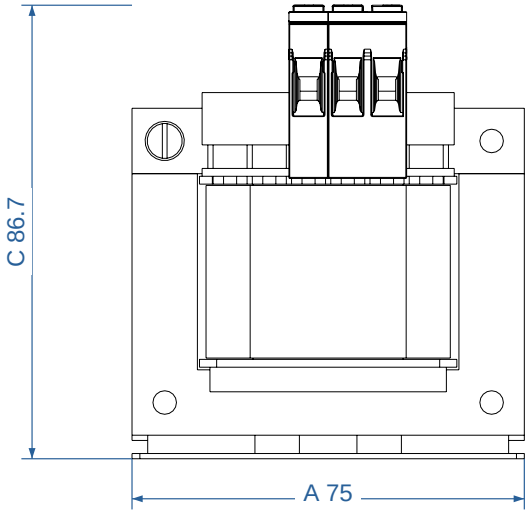
## Voltage options & part numbers

Primary: 110 V = F; 230 V = U1; 400 V = N1.
Secondary: 12 V = J; 24 V = B; 48 V = E; 110 V = F; 230 V = U.
Example: CL100U1F denotes 100 VA, 230 V primary and 110 V secondary.

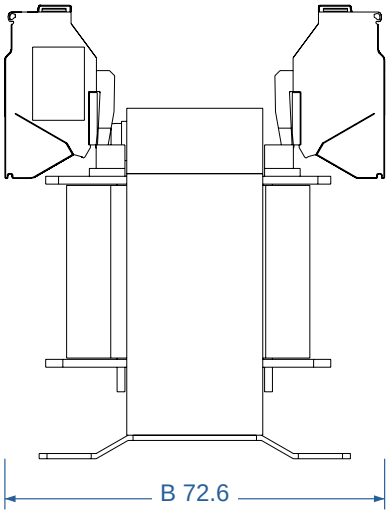
Select a transformer for both the continuous VA requirement and the inrush VA at the allowable voltage drop. Transformers require protection against short circuit and overload.

# Dimensional drawing

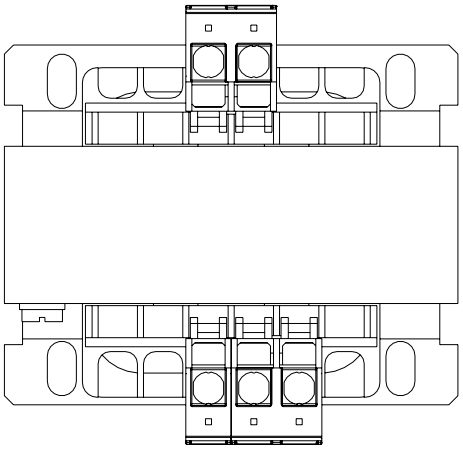
CL50 | 50 VA | EI75 x 26 | Dimensions in millimetres | Not to scale



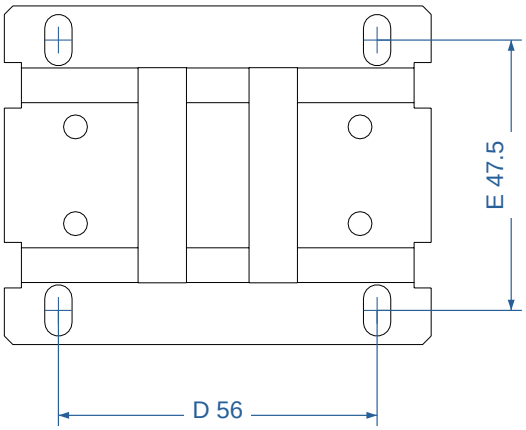

**FRONT**



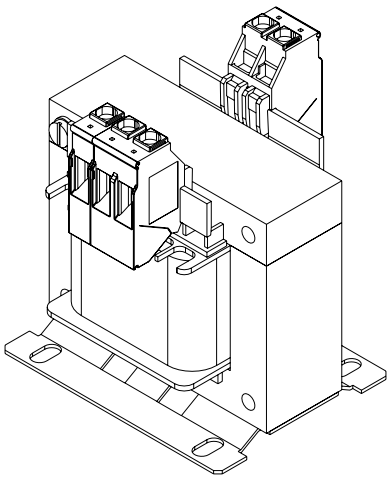

**RIGHT SIDE**



**TOP PLAN**




**MOUNTING PLAN**



**ISOMETRIC**

## DIMENSIONS

| Dimension | mm |
|---|---|
| A / overall width | 75 |
| B / overall depth | 72.6 |
| C / overall height | 86.7 |
| D x E / fixing centres | 56 x 47.5 |
| 4 slots / width x length | 4.8 x 9 |