

# Boxed Rotary Isolators and Changeover Switches: Enclosure Types



**ABS Enclosure: Size 1**



**ABS Enclosure: Size 2**



**ABS Enclosure: Size 3**



**Metal Enclosure**

| Box Size / Type                                                                                         | Height (mm) | Width (mm) | Depth (mm) | Depth (Inc Switch) (mm) |
|---------------------------------------------------------------------------------------------------------|-------------|------------|------------|-------------------------|
| <b>1</b> (ABS Enc * 20A, 25A, 32A & 40A 3P & 4P * 20A 4P only)                                          | 125         | 100        | 70         | 118                     |
| <b>2</b> (ABS Enc 63A & 80A 3P & 4P) + (25A, 32A & 40A 4P BB range)                                     | 175         | 125        | 90         | 134                     |
| <b>3</b> (ABS Enc 100A & 125A 4P) + (25A, 32A, & 40A 6P & 8P) + Changeover switches (25A, 32A & 40A 4P) | 280         | 190        | 130        | 190                     |
| <b>4</b> Metal Enc (for 63A, 80A & 125A in 6P, 8P & 4P Changeover)                                      | 400         | 300        | 200        | 260                     |
| <b>Metal Clad Enclosure</b> (25 - 80A 3P) + (25 - 125A 4P)                                              | 270         | 215        | 100        | 144                     |
| <b>Stainless Steel</b> (25 - 40A 4P)                                                                    | 173         | 100        | 118        | 162                     |
| <b>Stainless Steel</b> (63 - 80A 4P)                                                                    | 178         | 178        | 132        | 176                     |
| <b>Die Cast</b> (25 - 63A 4P)                                                                           | 152         | 150        | 100        | 144                     |
| <b>Metal Clad Changeover</b> (32 - 63A 4P)                                                              | 270         | 215        | 100        | 144                     |
| <b>DC Isolator ABS Enclosure</b> (16 - 32A 4P)                                                          | 170         | 100        | 90         | 115                     |

■ All Switch Ratings are at **AC21**



**ABS DC Enclosure**



**Metal Clad**



**Stainless Steel**



**Diecast**



**Metal Clad C/O**

| Load Break Enclosure / Switch Size | Potential No. of Additional Auxiliaries |
|------------------------------------|-----------------------------------------|
| 3P Boxed 32-80A                    | 1 Auxiliary                             |
| 4P Boxed 20-40A                    | -                                       |
| 4P Boxed 63-80A                    | 1 Auxiliary                             |
| 4P Boxed 100-125A                  | -                                       |
| 4P Large Enclosure 25-40A          | 1 Auxiliary                             |
| 3P Metal Clad 25-80A               | 1 Auxiliary                             |
| 4P Metal Clad 25-125A              | 1 Auxiliary                             |
| 4P Diecast 25-63A                  | 1 Auxiliary                             |
| 4P Stainless Steel 25-40A          | -                                       |
| 4P Stainless Steel 63-80A          | 2 Auxiliaries (1 either side)           |
| 6P Boxed 25-40A                    | 2 Auxiliaries (1 either side)           |
| 6P Boxed 63-125A                   | 2 Auxiliaries (1 either side)           |
| 8P Boxed 25-40A                    | -                                       |
| 8P Boxed 63-125A                   | -                                       |
| 4P Boxed Change Over 25-40A        | -                                       |
| 4P Metal Clad Change Over 32-63A   | -                                       |
| 4P Metal Enc Change Over 63-125A   | -                                       |

|                                                        |                            |                                        |             |      |      |        |                                                                                    |      |      |       |       |   |
|--------------------------------------------------------|----------------------------|----------------------------------------|-------------|------|------|--------|------------------------------------------------------------------------------------|------|------|-------|-------|---|
| Canadian Standards:                                    |                            | CAN / CSA-C22.2 No.14                  |             |      |      |        |  |      |      |       |       |   |
| American Standards:                                    |                            | UL508                                  |             |      |      |        |                                                                                    |      |      |       |       |   |
| IEC & European Standards:                              |                            | IEC 60947-1 & 3, EN60947, VDE 0660-107 |             |      |      |        |                                                                                    |      |      |       |       |   |
| Isolator Rating (AC21)                                 |                            | Measure                                | Switch Code | LB20 | LB25 | LB32   | LB40                                                                               | LB63 | LB80 | LB100 | LB125 |   |
| Rated Operational Voltage, UE                          |                            |                                        |             |      |      |        |                                                                                    |      |      |       |       |   |
| IEC / EN / VDE                                         |                            | Volts                                  | V           | 690  | 690  | 690    | 690                                                                                | 690  | 690  | 690   | 690   |   |
| UL / CSA                                               |                            | Volts                                  | V           | 600  | 600  | 600    | 600                                                                                | 600  | 600  | 600   | 600   |   |
| Main switch: Isolating Voltage up to                   |                            | Volts                                  | V           | 750  | 750  | 750    | 750                                                                                | 750  | 750  | 750   | 750   |   |
| Resistance to Surge Pulse Voltage, Uimp                |                            | Volts                                  | KV          | 6    | 6    | 6      | 6                                                                                  | 6    | 6    | 6     | 6     |   |
| Rated Uninterrupted Current, Iu                        |                            | Amp                                    | A           | 16   | 20   | 25     | 32                                                                                 | 40   | 63   | 100   | 125   |   |
| Rated Uninterrupted Current, Ie                        |                            |                                        |             |      |      |        |                                                                                    |      |      |       |       |   |
| IEC / EN / VDE                                         | AC22                       | Amp                                    | A           | 16   | 20   | 25     | 32                                                                                 | 40   | 63   | 100   | 125   |   |
|                                                        | AC-21A                     | Amp                                    | A           | 20   | 25   | 32     | 40                                                                                 | 63   | 80   | 100   | 125   |   |
|                                                        | AC-1                       | Amp                                    | A           | 20   | 25   | 32     | 40                                                                                 | 63   | 80   | 100   | 125   |   |
| UL / CSA                                               |                            | Amp                                    | A           | 16   | 20   | 25     | 32                                                                                 | 40   | 63   | 100   | 125   |   |
| Rated Operational Power at 50 to 60Hz (IEC / EN / VDE) |                            |                                        |             |      |      |        |                                                                                    |      |      |       |       |   |
| IEC / EN / VDE                                         | AC-23A,<br>3 Phase, 3 Pole | 220-240V                               | kW          | 3    | 4    | 5.5    | 7.5                                                                                | 11   | 15   | 22    | 30    |   |
|                                                        |                            | 380-440V                               | kW          | 5.5  | 7.5  | 11     | 15                                                                                 | 18.5 | 30   | 37    | 45    |   |
|                                                        |                            | 500-690V                               | kW          | 7.5  | 11   | 11     | 15                                                                                 | 22   | 30   | 45    | 55    |   |
|                                                        | AC-3A,<br>3 Phase, 3 Pole  | 220-240V                               | kW          | 2    | 3    | 4      | 5.5                                                                                | 7.5  | 11   | 18.5  | 22    |   |
|                                                        |                            | 380-440V                               | kW          | 3    | 5.5  | 7.5    | 11                                                                                 | 18.5 | 22   | 30    | 37    |   |
|                                                        |                            | 500-690V                               | kW          | 5.5  | 7.5  | 11     | 11                                                                                 | 18.5 | 22   | 37    | 45    |   |
| Short Circuit Capacity (IEC / EN / VDE)                |                            |                                        |             |      |      |        |                                                                                    |      |      |       |       |   |
| Max. Fuse Size (Type gL)                               |                            | Amp                                    | A           | 16   | 25   | 25     | 32                                                                                 | 40   | 63   | 100   | 125   |   |
| Rated Fused Short Circuit Current                      |                            | Amp                                    | kA          | 5    | 5    | 30     | 30                                                                                 | 30   | 30   | 30    | 30    |   |
| UL / CSA Power Rating                                  |                            |                                        |             |      |      |        |                                                                                    |      |      |       |       |   |
| DOL                                                    | 3 Phase, 3 Pole            | 120V                                   | HP          | 1.5  | 1.5  | 3      | 3                                                                                  | 5    | 7.5  | 7.5   | 7.5   |   |
|                                                        |                            | 240V                                   | HP          | 3    | 3    | 7.5    | 7.5                                                                                | 10   | 15   | 15    | 15    |   |
|                                                        |                            | 480V                                   | HP          | 7.5  | 7.5  | 15     | 20                                                                                 | 20   | 25   | 30    | 40    |   |
|                                                        |                            | 600V                                   | HP          | 10   | 10   | 20     | 25                                                                                 | 30   | 30   | 40    | 50    |   |
|                                                        | 1 Phase                    | 120V                                   | HP          | 0.5  | 0.5  | 1.5    | 2                                                                                  | 3    | 4.5  | 3     | 3     |   |
|                                                        |                            | 240V                                   | HP          | 1.5  | 1.5  | 2      | 3                                                                                  | 4    | 6    | 7.5   | 7.5   |   |
| Short Circuit Capacity (UL / CSA)                      |                            |                                        |             |      |      |        |                                                                                    |      |      |       |       |   |
| Max. Fuse Size                                         |                            | Amp                                    | A           | 25   | 25   | 50     | 50                                                                                 | 70   | 70   | 100   | 125   |   |
| Fuse (Being certified with J type fuses)               |                            | Type                                   | -           | J    | J    | J, RK5 |                                                                                    |      |      |       | J     | J |
| Rated Fuse Short Circuit Current                       |                            | Amp                                    | kA          | 5    | 5    | 5      | 5                                                                                  | 5    | 5    | 10    | 10    |   |
| Terminal Cross Section                                 |                            |                                        |             |      |      |        |                                                                                    |      |      |       |       |   |
| Single / Multiple Strand Wire                          |                            | Min                                    | mm²         | 1.5  | 1.5  | 1      | 1                                                                                  | 4    | 4    | 6     | 6     |   |
|                                                        |                            | Max                                    | mm²         | 6    | 6    | 10     | 10                                                                                 | 16   | 16   | 70    | 70    |   |
| Fine Strand Wire with Sleeve                           |                            | Min                                    | mm²         | 0.5  | 0.5  | 0.75   | 0.75                                                                               | 2.5  | 2.5  | 4     | 4     |   |
|                                                        |                            | Max                                    | mm²         | 6    | 6    | 6      | 6                                                                                  | 10   | 10   | 50    | 50    |   |
| American Wire Gauge                                    |                            | -                                      | AWG         | 12   | 12   | 8      | 8                                                                                  | 6    | 6    | 1     | 1     |   |
| Recommended Tightening Torque for Terminals            |                            | -                                      | NM          | 0.8  | 0.8  | 1.7    | 1.7                                                                                | 1.7  | 1.7  | 2.5   | 2.5   |   |

## Load Break Switch - Operating Temperatures

| Temperature | Derating % | 20A | 25A | 32A | 40A | 63A | 80A | 100A | 125A |
|-------------|------------|-----|-----|-----|-----|-----|-----|------|------|
| 40°C        | 100%       | 20A | 25A | 32A | 40A | 63A | 80A | 100A | 125A |
| 45°C        | 95%        | 19A | 24A | 30A | 38A | 60A | 76A | 95A  | 119A |
| 50°C        | 90%        | 18A | 23A | 29A | 36A | 57A | 72A | 90A  | 113A |
| 55°C        | 85%        | 17A | 21A | 27A | 34A | 54A | 68A | 85A  | 106A |
| 60°C        | 80%        | 16A | 20A | 26A | 32A | 50A | 64A | 80A  | 100A |
| 65°C        | 75%        | 15A | 19A | 24A | 30A | 47A | 60A | 75A  | 94A  |
| 70°C        | 70%        | 14A | 18A | 22A | 28A | 44A | 56A | 70A  | 88A  |
| 75°C        | 65%        | 13A | 16A | 21A | 26A | 41A | 52A | 65A  | 81A  |
| 80°C        | 60%        | 12A | 15A | 19A | 24A | 38A | 48A | 60A  | 75A  |

The normal operating temperature range for our switch disconnectors is from -25°C to +40°C.  
 For higher ambient temperatures of more than +40°C the switch has to be *derated accordingly*.  
 The table below shows the percentage of derating in load for different temperature ranges.  
 The maximum operating temperature of our switches in continuous use is +80°C.

## Duty Category Information Table

| Current | Category | Typical applications                                                    | Relevant IEC Product Standard |
|---------|----------|-------------------------------------------------------------------------|-------------------------------|
| AC      | AC 1     | Non-inductive or slightly inductive loads, resistance furnaces.         | 947-4                         |
|         | AC-3     | Squirrel-cage motors:<br>Starting, switching off motors during running. | 947-3                         |
|         | AC-15    | Control of AC electromagnetic Loads.                                    | 947-5-1                       |
|         | AC-21    | Switching of resistive loads, including moderate overloads.             | 947-3                         |
|         | AC-22    | Switching of mixed resistive & inductive loads.                         | 947-3                         |
|         | AC-23    | Switching of motor loads or other highly inductive loads.               | 947-3                         |
| DC      | DC-1     | Non-inductive or slightly inductive loads, resistance furnaces.         | 947-4                         |
|         | DC-13    | Control of DC electromagnets                                            | 947-5-1                       |