# D100QS Series aR 1000VDC

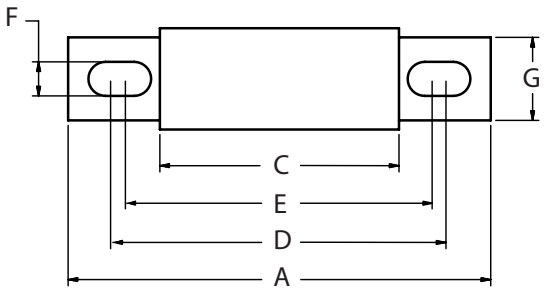
## Fast-Acting DC Fuses

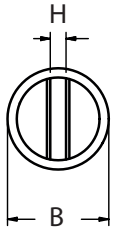
DC HIGH SPEED FUSES

Electrification in construction, marine, agriculture, manufacturing, mining, and other industries, in addition to transportation, is a critical trend in cleaner energy. The D100QS North American style round body high-speed fuse series is Mersen's next evolution for high-power conversion applications protection for those industries shifting to Direct Current (DC) systems today. The D100QS fuse series is specifically designed to reduce the $I^2t$, peak let-through current, and arc voltages during fault conditions to protect applications such as battery charging systems and other DC components like relays and contactors.

| Technical Data Overview | |
|---|---|
| DC Ratings | 50-300A, 1000VDC, L/R ≤1ms, 100kA IR, MBC<3kA |

## DIMENSIONS D100QS 50-300A




**Catalog numbers ending with "-4Y" are designated for metric screws*

| Article Number | A | B | C | D | E | F | F* | G | H |
|---|---|---|---|---|---|---|---|---|---|
| D100QS50 to 100 in (mm) | 4.38 (111) | 1 (25.4) | 2.88 (73) | 3.69 (93.6) | 3.50 (88.9) | 0.31 (7.9) | 0.35 (9.0) | 0.75 (19) | 0.13 (3.2) |
| D100QS125 to 200 in (mm) | 4.38 (111) | 1.22 (31) | 2.88 (73) | 3.69 (93.6) | 3.56 (90.5) | 0.31 (7.9) | 0.35 (9.0) | 1 (25.4) | 0.19 (4.8) |
| D100QS225 to 300 in (mm) | 5.09 (129) | 1.50 (38.1) | 2.84 (72.2) | 4.16 (106) | 3.53 (89.7) | 0.40 (10.2) | - | 1 (25.4) | 0.25 (6.4) |

## FEATURES/BENEFITS

- Lower $I^2t$ performance for improved protection of equipment
- Superior cycling ability for long, reliable life on high cyclic loading
- Low watts losses
- High Interrupting rating for optimal short circuit protection
- Designed to provide superior power cycling compared to general purpose fuses
- Built to withstand vibration

## APPLICATIONS

- High Power battery charging and management systems protection
- Energy Storage Systems (ESS)
- Electrical Energy Storage (EES)
- Battery Disconnect Unit (BDU)
- Battery pack protection
- DC Fast-Charging station for EV applications
- Backup protection for DC relay/disconnector/switch
- Protection of 1000VDC or less, UPS and inverters

## APPROVALS/STANDARDS

- UL Recognized
  UL File: E60314
  DC: 50-300A, 1000VDC
- REACH/RoHS compliant

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## PRODUCT RANGE

*D100QS100-4*

*D100QS200-4Y*

*D100QS300-4*

### D100QS 50-300A Round Body Fuses

| Catalog number | Max DC voltage, L/R < 1ms (VDC)* | Rated current $I_n$ (A) | Power dissipation at 0.8$I_n$ (W) | Power dissipation at $I_n$ (W) | MBC @1000VDC, L/R <1ms (A)** | Time to clear MBC (ms) | Weight (kg) | Package |
|---|---|---|---|---|---|---|---|---|
| D100QS50-4<br>D100QS50-4Y | 1000 | 50 | 5.3 | 10 | 960 | 40 | 0.12 | 5 |
| D100QS60-4<br>D100QS60-4Y | 1000 | 60 | 6.5 | 12 | 1160 | 40 | 0.12 | 5 |
| D100QS70-4<br>D100QS70-4Y | 1000 | 70 | 8.1 | 15 | 1350 | 40 | 0.12 | 5 |
| D100QS80-4<br>D100QS80-4Y | 1000 | 80 | 9.7 | 18 | 1540 | 40 | 0.12 | 5 |
| D100QS90-4<br>D100QS90-4Y | 1000 | 90 | 11 | 20 | 1730 | 40 | 0.12 | 5 |
| D100QS100-4<br>D100QS100-4Y | 1000 | 100 | 13 | 24 | 1920 | 40 | 0.12 | 5 |
| D100QS125-4<br>D100QS125-4Y | 1000 | 125 | 12 | 22 | 940 | 80 | 0.19 | 5 |
| D100QS150-4<br>D100QS150-4Y | 1000 | 150 | 16 | 29 | 1130 | 80 | 0.19 | 5 |
| D100QS175-4<br>D100QS175-4Y | 1000 | 175 | 19 | 35 | 1320 | 80 | 0.19 | 5 |
| D100QS200-4<br>D100QS200-4Y | 1000 | 200 | 22 | 41 | 1510 | 80 | 0.19 | 5 |
| D100QS225-4 | 1000 | 225 | 20 | 37 | 2200 | 80 | 0.3 | 5 |
| D100QS250-4 | 1000 | 250 | 23 | 42 | 2430 | 80 | 0.3 | 5 |
| D100QS300-4 | 1000 | 300 | 29 | 53 | 2920 | 80 | 0.3 | 5 |
| Catalog numbers ending with "-4Y" are designated for metric screws | | | | | | | | |
| *Time Constant: L/R ≤1ms | | | | | | | | |
| **MBC (Minimum Breaking Capacity): Smallest current fuse has been tested to safely open at rated voltage and associated time constant | | | | | | | | |

## ACCESSORIES

*P243C*

*1SC250*

*1SC375*

### Fuse blocks

| Catalog number | Item number | Rated DC voltage | Application DC Fuses | Contact Materials | Weight |
|---|---|---|---|---|---|
| **P243 Fuse blocks** | | | | | |
| P243C | P243C | 700 V | D70QS fuses from 225 to 600A | Tin-Plated Copper | 0.12 kg |
| **P266 Fuse blocks** | | | | | |
| P266A | P266A | 1000 V | D100QS fuses from 225 to 300A | Stainless Steel | 0.39 kg |
| **1SC/1MSC Modular Fuse blocks** | | | | | |
| 1SCM8 | 1SCM8 | 1000 V | D100QS up to 200A and D70QS up to 400A | Zinc-Plated Steel | 68 g |
| 1SC250 | 1SC250 | 1000 V | D100QS up to 200A and D70QS up to 400A | Zinc-Plated Steel | 68 g |
| 1SC375 | 1SC375 | 1000 V | D100QS 225A-300A and D70QS 450A-600A | Zinc-Plated Steel | 68 g |
| 1SCM10 | 1SCM10 | 1000 V | D100QS 225A-300A and D70QS 450A-600A | Zinc-Plated Steel | 68 g |


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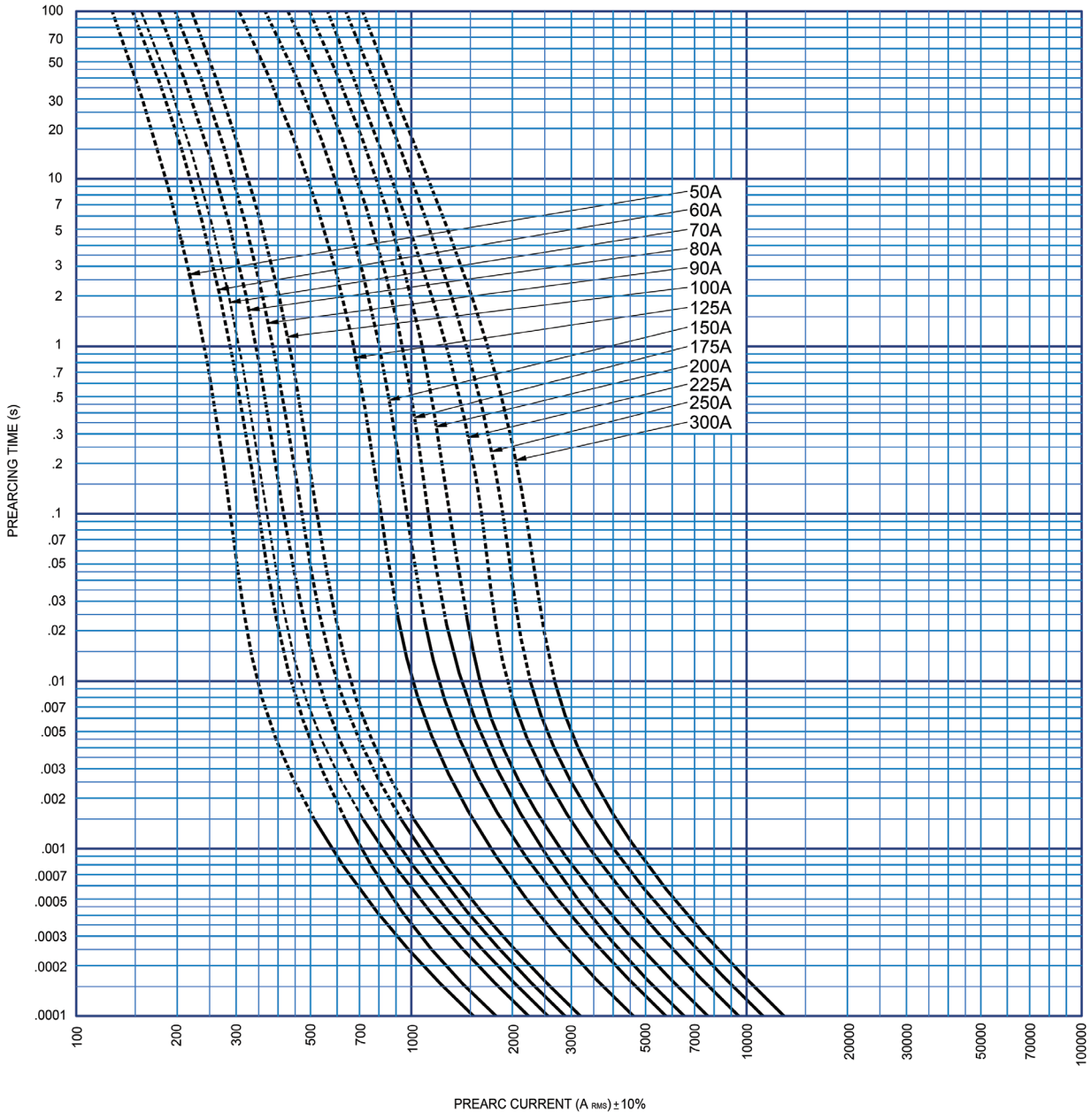
## MELTING TIME CURRENT CURVE





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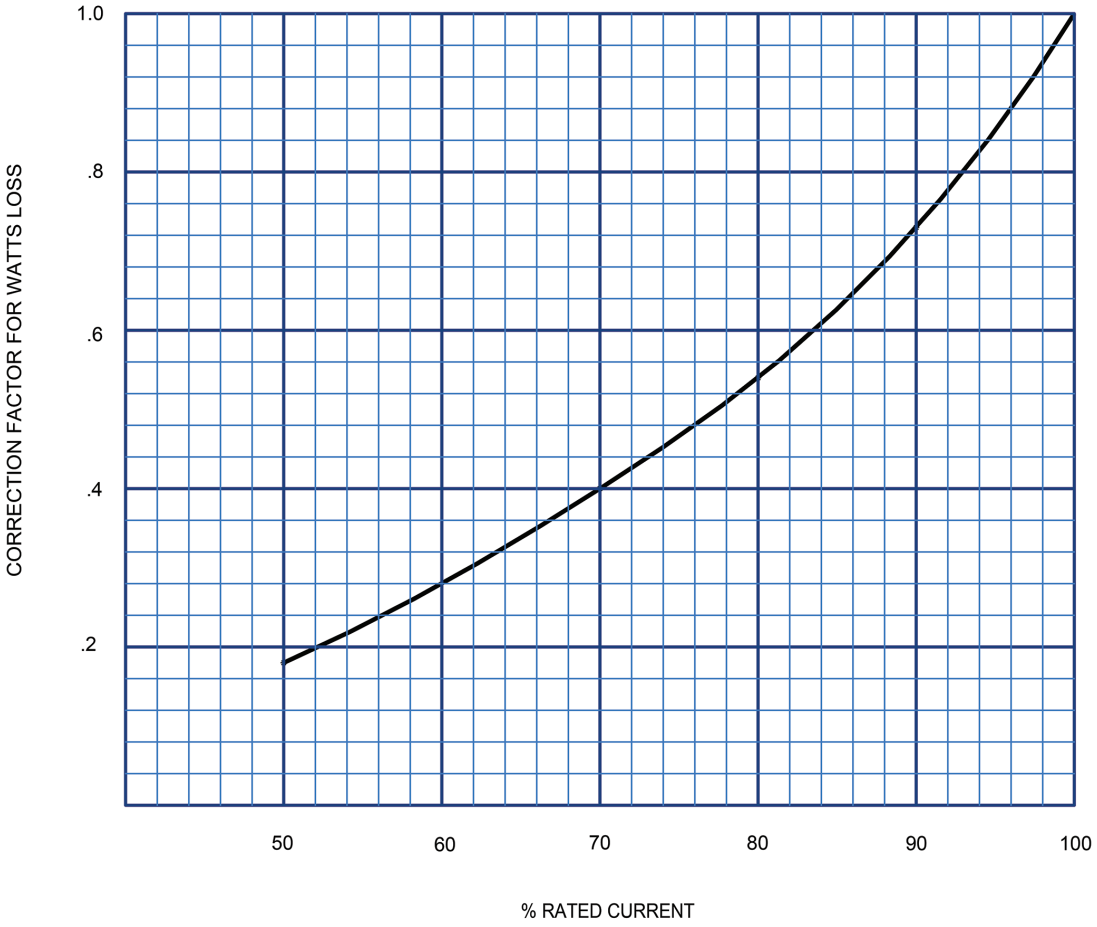
## WATTS LOSS VS % RATED CURRENT

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