

QF10 - Series Earth Leakages

The QF10 is an Earth Leakage Device with overload protection (RCBO) with unswitched neutral in a single 18 mm wide unit. It has an additional 1000 mm long neutral cable and fits on DIN and CBI mini rail.



QF10
Dual (DIN & Mini rail) mount

Features

- Hydraulic-magnetic technology
- 100% rating capability, independent of ambient temperature
- AS/NZS 3190 compliant
- Ratings 6 A to 32 A
- Earth Leakage sensitivity 30 mA, **Type A**
- Single pole with unswitched neutral
- Supplied with a neutral cable
- Compact 18 mm width
- Precision tripping characteristics
- Trip indication with mid-trip position
- Can be switched on immediately after tripping
- Design permits easier installation onto busbar (single line terminal with neutral cable)
- 45 mm front escutcheon

Applications

- Residential and commercial applications requiring high sensitivity earth leakage protection from electrical shock and fire hazards
- Telecom / datacom equipment
- Lighting control
- Alternative energy equipment
- Mobile power generation equipment
- Railway signalling and infrastructure

Approvals



AS/NZS 3190

Hydraulic-Magnetic Circuit Breakers 100% rated, unaffected by ambient temperature

QF10 - Series Earth Leakages

Technical Data

| | |
|-------------------------|-----------------------|
| Product Type | QF10 |
| Approvals | AS/NZS 3190 |
| Number of Poles | (1+N) in 18 mm width |
| Standard Ampere Ratings | 6, 10, 16, 20, 25, 32 |
| Sensitivity | 30 mA, Type A |
| Rated Voltage | 240 V |
| Rated Interrupting | 6 kA |

| | |
|---------------------------|--|
| Product Type | QF10 |
| Ambient Temperature Range | -40 °C to +85 °C |
| Mounting Options | Dual (DIN & Mini rail) |
| Time Delay Curves | 2, 9 |
| Endurance | 1500 electrical operations (AS/NZS 3190) |
| Dielectric Strength | 1480 V (single pole), 50 Hz for one minute after testing |
| Weight | 240 g per pole (unpacked) |
| Altitude | Certification tests done at altitude ≈ 2000 metres. |
| Shock | 16 G (IEC 600068-2-27) |
| Vibration | 1 G (IEC 600068-2-27) (sinusoidal wave) |
| Flammability | I3 - Ignition does not persist at 850 °C after glow wire is withdrawn with an oxygen index of ≥ 28 |
| Toxicity | F1 - Smoke index of ≤ 20 which determines the fume class |
| Pollution Degree | PD2 - Normally only non-conductive pollution occurs. Temporary conductivity caused by condensation is to be expected. |

| Terminals | Wire Size (IEC) | Torque (IEC) | Comments |
|------------|--|--------------|---------------------------|
| Line (L) | 0.75 - 25 mm ² | 2.5 N.m | Pozidriv #2 Combi head |
| Load (L+N) | 0.75 - 16 mm ² | 1.2 N.m | Pozidriv #2 Combi head |
| Load (N) | 4 mm ² (6 A - 32 A) 6 mm ² (40 A) | N/A | Fly leads |

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Long Code

Example Code: Q-F-10-A--DM-2-32A-30mA-240V

| Group | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-------------|------------|--------|------------|----------|------------------------|------------|----------------------------|------------------------|----------------------|--------------------|
| Requirement | Q Frame | Type F | 1 pole + N | Overload | No auxiliary switch | Dual Mount | Medium delay curve 2 | Current rating 40 A | Sensitivity 30 mA | Voltage 240 Vac |
| Long Code | Q | F | 10 | A | - | DM | 2 | 32A | 30mA | 240V |

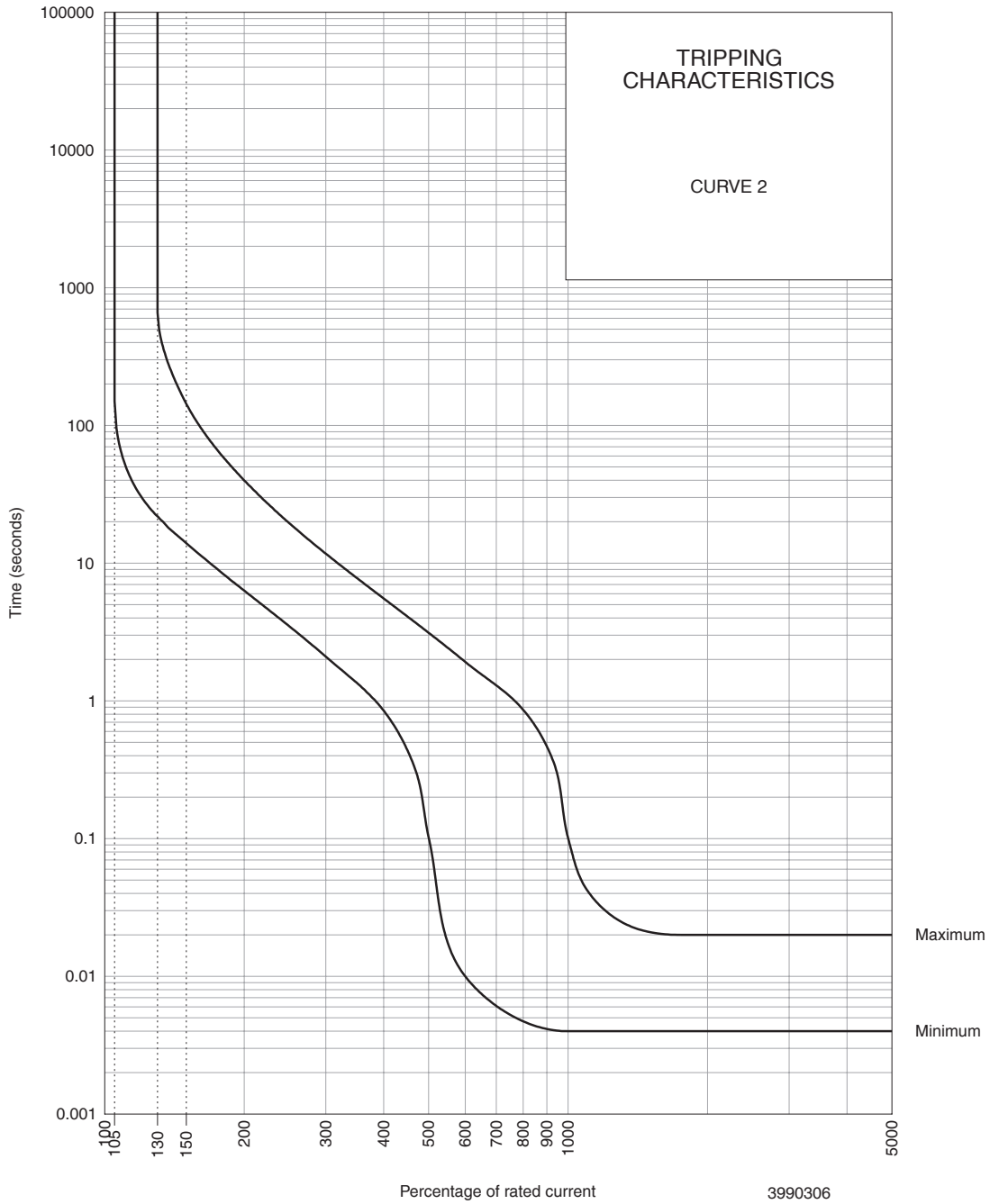
Ordering Information

| Group 1: Frame Type | Code | Description | Comments |
|---|-----------------------|--|--|
| | Q | 18 mm wide earth leakage | |
| Group 2: Product Type | Code | Description | Comments |
| | F | Unswitched, 240 Vac, 6 kA | |
| Group 3: No of Poles | Code | Description | Comments |
| | 10 | Single pole plus unswitched neutral (1+N) in 18 mm | |
| Group 4: E-L Type | Code | Description | Comments |
| | A | Overload protection | |
| Group 5: Auxiliary / Additional Pole | Code | Description | Comments |
| | - | Not applicable | |
| Group 6: Mounting | Code | Description | Comments |
| | D | Dual (DIN & mini rail) | Dual mount supplied in grey body only - 45 mm front Escutcheon |
| Group 7: Time Delays | Code | Description | Comments |
| | 2 | Medium time delay | |
| | 9 | Long time delay | |
| Group 8: Current Ratings | Code / Description | | Comments |
| | 6, 10, 16, 20, 25, 32 | | |
| Group 9: Sensitivity | Code | Description | Comments |
| | 30mA | 30 mA | Standard |
| Group 10: Voltage | Code | Description | Comments |
| | 240 V | 240 Vac | |

For options not listed, please contact CBI

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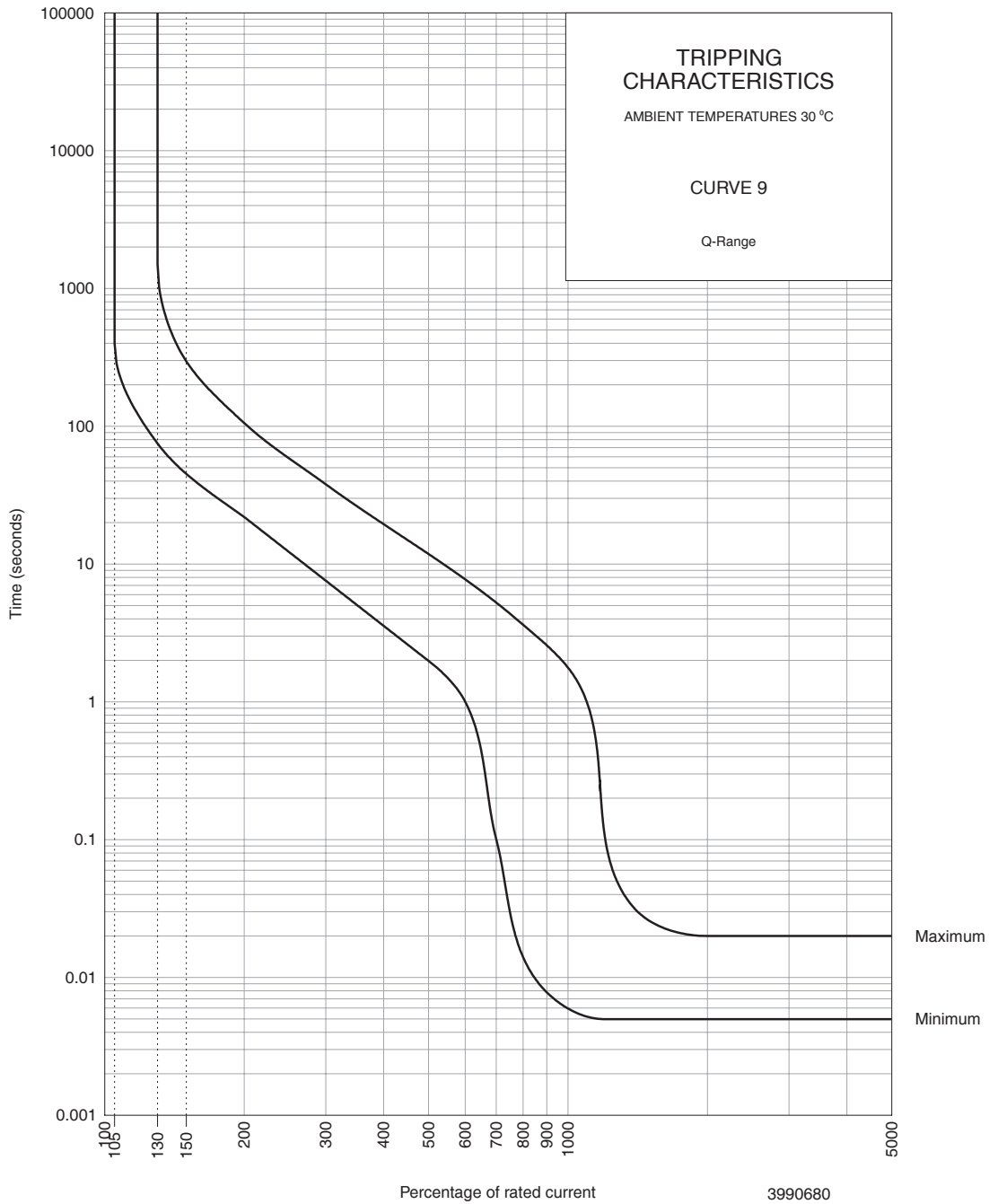
Time Delay Curve



| PERCENTAGE OF RATED CURRENT | 105% | 130% | 145% | 150% | 200% | 300% | 400% | 500% | 600% | 700% | 800% | 900% | 1000% | 2000% |
|------------------------------|---------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|
| MINIMUM TRIP TIME IN SECONDS | NO TRIP | 22 | 15.4 | 14 | 6.3 | 2.1 | 0.85 | 0.1 | 0.001 | 0.006 | 0.005 | 0.041 | 0.004 | 0.004 |
| MAXIMUM TRIP TIME IN SECONDS | NO TRIP | 660 | 180 | 144 | 40 | 12 | 5.5 | 3 | 1.92 | 1.3 | 0.86 | 0.47 | 0.1 | 0.02 |

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Time Delay Curve



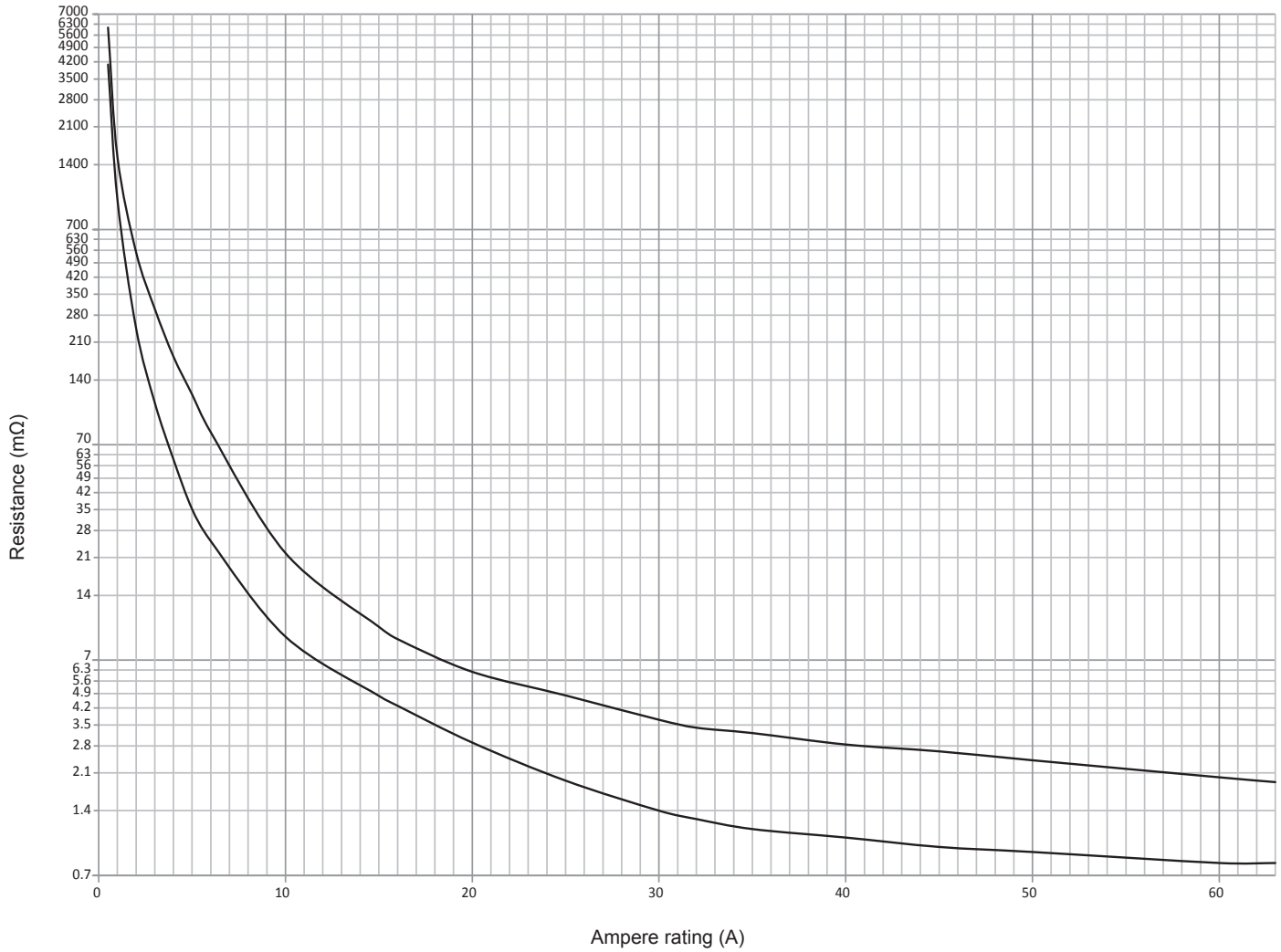
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REV E

| PERCENTAGE OF RATED CURRENT | 105% | 130% | 145% | 150% | 200% | 300% | 400% | 500% | 600% | 700% | 800% | 900% | 1200% | 2000% |
|------------------------------|---------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| MINIMUM TRIP TIME IN SECONDS | NO TRIP | 75 | 50 | 45 | 22 | 7.6 | 3.6 | 2 | 1 | 0.1 | 0.01 | 0.008 | 0.005 | 0.005 |
| MAXIMUM TRIP TIME IN SECONDS | NO TRIP | 1500 | 360 | 295 | 100 | 38 | 19 | 11.8 | 7.7 | 5.3 | 3.6 | 2.6 | 0.06 | 0.02 |

* The published time delay curves are generated at 30°C ambient temperature with the circuit breaker mounted in the up-right position. The “must hold”, “must trip” and “instantaneous trip” current values are not affected by temperature, although delay time for the other operating current values may have to be adjusted using the temperature compensation curve which is available on request.

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Resistance Curve

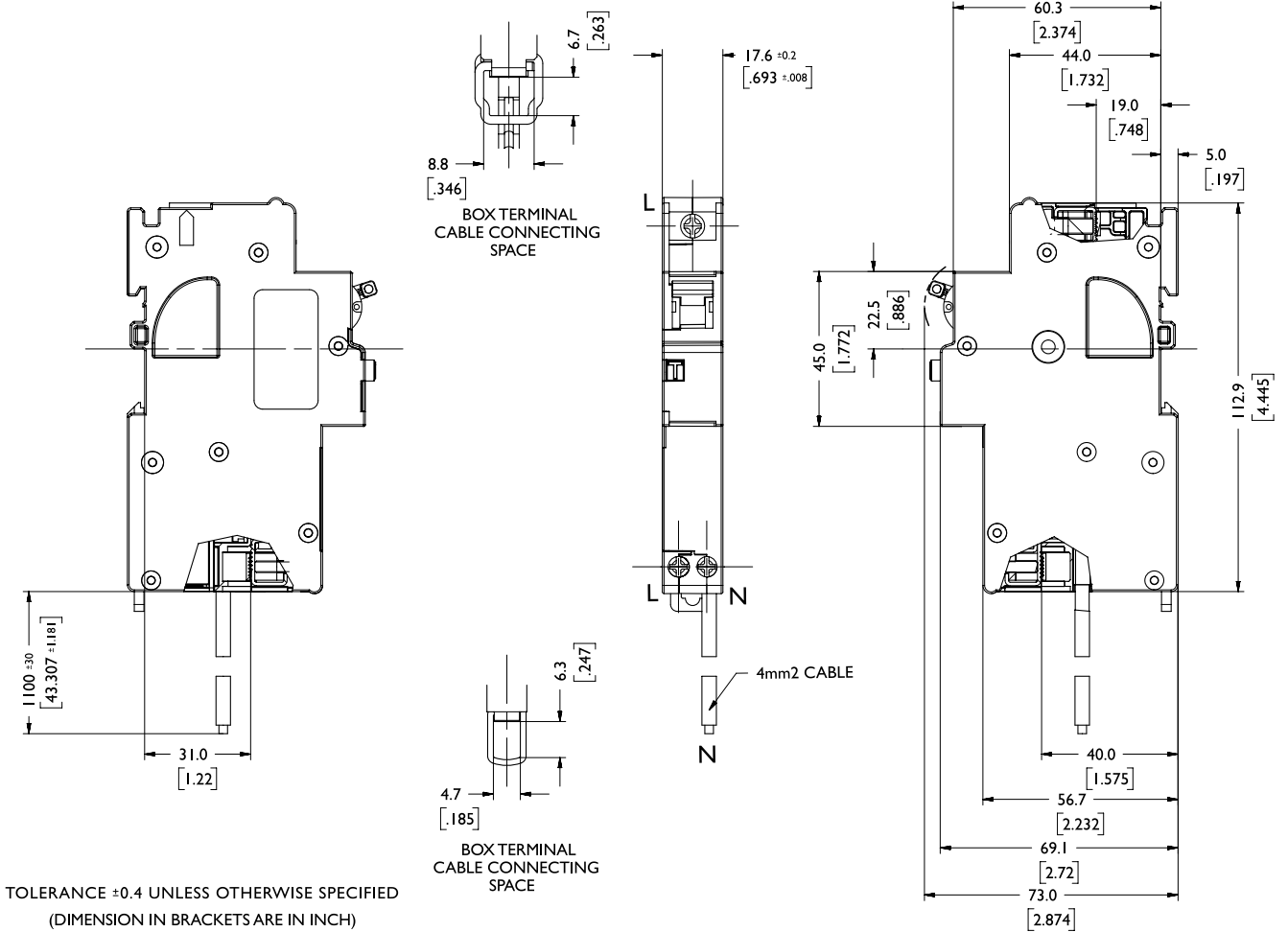


3990A784 REV A

| Amp RATING | 0.5 | 1 | 2 | 5 | 6 | 10 | 15 | 20 | 25 | 30 | 32 | 40 | 50 | 60 | 63 |
|--------------|------|------|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| MINIMUM (mΩ) | 4085 | 970 | 244 | 35 | 25 | 9.0 | 4.8 | 2.9 | 1.9 | 1.4 | 1.3 | 1.1 | 0.9 | 0.8 | 0.8 |
| MAXIMUM (mΩ) | 6065 | 1527 | 550 | 120 | 80 | 22 | 10 | 6.2 | 4.8 | 3.7 | 3.4 | 2.8 | 2.4 | 2.0 | 1.9 |

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Outline Dimensions: Dual (DIN & mini rail) mount



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