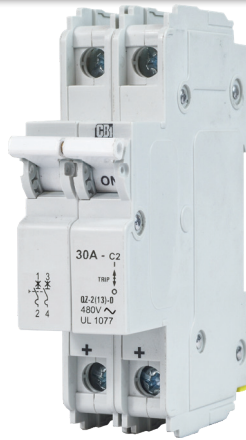


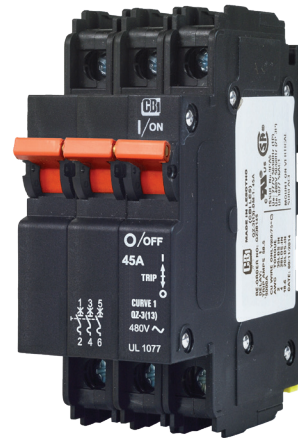
## QZ - Series Miniature Circuit Breakers



Dual mount  
1 pole



DIN mount  
2 pole



Dual mount  
3 pole

### Features

- AC circuit breaker
- Hydraulic-magnetic technology
- 100% rating capability, independent of ambient temperature
- One, two and three pole (UL). One, two, three pole and 1+N, 3+N (VDE).
- VDE, EAC approved, CE certified
- UL 1077 recognised (Supplementary protector)
- Ratings 0.5 A to 60 A (Depends on specification and number of poles)
- Optional shunt trip (Approvals pending)
- Wide range of time delays and operating currents
- Precision tripping characteristics
- Ultra compact – 13 mm wide module
- Trip indication with mid-trip handle
- Can be switched on immediately after tripping
- DIN mount product in grey shells
- Dual mount product in black shells

### Auxiliary Switch, Trip Alarm & Combo: Features

- Factory fitted
- Attached to right hand side of circuit breaker
- Compact 6.5 mm width
- Auxiliary switch (DIN and Dual mount)
- Auxiliary switch + trip alarm (Dual mount only)
- Trip alarm (Dual mount only)
- UL 489 listed & IEC 60947-5-1
- 110 Vdc, 0.5 A; 240 Vac, 6A

### Applications

- AC branch circuit protection (IEC / EN 60947-2)
- Supplementary protection (UL 1077)
- Telecom / datacom equipment
- Lighting control
- UPS equipment
- Alternative energy equipment
- Mobile power generation equipment

### Optional Accessories

- Handle lock
- Surface mounting clips
- 57 mm escutcheon blank (Dual mount only)
- 57 mm safety blank (Dual mount only)

### Approvals



(IEC / EN 60947-2)



US (UL 1077)



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

## QZ - Series Miniature Circuit Breakers

### Technical Data

Product Type	Supplementary Protector						
Approvals	UL 1077						
	Tested with series fuse					Tested without series fuse	
Number of Poles	1	1	2	3	3	1	3
Operating Voltages	120 Vac	277 Vac	480 Vac	240 Vac	277 / 480 Vac	120 Vac	240 Vac
Minimum Current Rating	0.5 A					0.5 A	
Maximum Current Rating	60 A					50 A	
Specific Ratings (Verify Certification)	0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 20, 25, 30, 35, 40, 45, 50, 60 A						
Interrupting S/C Capacity	5 kA					5 kA	

Product Type	Circuit Breaker				
Approvals	IEC / EN 60947-2, CE, EAC				
Number of Poles	1	2 (1+N)	2	3	4 (3+N)
Operating Voltages	240 Vac		415 Vac		
Minimum Current Rating	5 A				
Maximum Current Rating	50 A				
Specific Ratings (Verify Certification)	5, 6, 7, 8, 9, 10, 12, 15, 16, 20, 25, 30, 35, 40, 45, 50 A				
Ultimate S/C Breaking Capacity (Icu)	3 kA				

Verify approvals for specific ratings in accordance with the relevant test certificates.

For other ratings, consult CBI

## QZ - Series Miniature Circuit Breakers

### Technical Data

Product Type	QZ
Ambient Operating Temperature	-40 °C to +85 °C
Mounting Options	DIN rail, Dual mounting (DIN & Mini), Surface mounting clip
Time Delay Curves	1, 2, 3, 9, OP
Endurance	10000 operations - 1500 with current, 8500 without current (IEC 60947-2 Clause 7.2.4.2)* 6000 operations with current (UL 1077 Clause 22)*
Dielectric Strength	1000 - 2000 Vac for one minute (IEC 60947-2 Clause 8.3.3.3)* 1000 Vac plus twice the rated voltage for one minute (UL 1077 Clause 23)*
Rated Impulse Withstand Voltage	4 kV (IEC 60947-2)
Weight	102 g per pole, 160 g with auxiliary (unpacked)
Altitude	Certification tests done at altitude ≈ 2000 metres. Will operate at higher altitudes.
Shock	16 G (IEC 60068-2-27)
Vibration	2 G (IEC 60068-2-6) (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.

\* Refer to the standard for details

Auxiliary Module	
Auxiliary Switch	DIN and CBI mini rail mounted
Trip Alarm	CBI mini rail mount only
Auxiliary Switch / Trip Alarm Combo	CBI mini rail mount only

Circuit Breaker	Wire Size mm <sup>2</sup> (IEC)	Wire Gauge (UL)	Torque (IEC)	Torque (UL)	Comments
Main Terminals	0.75 - 25 mm <sup>2</sup>	18 – 3 – AWG	2.5 Nm	20 in-lb	Pozidriv #2 Combi head

Verify approvals for specific ratings in accordance with the relevant test certificates.

## QZ - Series Miniature Circuit Breakers

### Long Code

Example Code: **QZ--AT-3(13)-DM-2-50A----**

Group	1	2	3	4	5	6	7	8	9	10	11
Requirement	QZ frame	Switch / neutral	Auxiliary switch + trip alarm	Triple pole	13 mm module width	Dual mount	Medium delay curve 2	Current rating 50 A	Future use	No shunt trip	Future use
Long Code	QZ	-	AT	3	(13)	DM	2	50A	-	-	-

### Ordering Information

<b>Group 1:</b> Frame Type	Code	Description	Comments	
	QZ	Miniature circuit breaker	IEC/EN 60947-2, UL 1077	
<b>Group 2:</b> Switch/Neutral	Code	Description	Comments	
	-	Not applicable		
	N	Neutral	Green handle	
<b>Group 3:</b> Auxiliary	Code	Description	Comments	
	-	Not applicable	If no auxiliary is required	
	A	Auxiliary switch (1 x Aux in 1 module)	6.5 mm module fitted on right-hand side (DIN & Dual mount)	
	T	Trip alarm (1 x Trip alarm in 1 module)	6.5 mm module fitted on right-hand side (Dual mount black)	
	AT	Auxiliary switch + trip alarm combo (Combined in 1 module)	6.5 mm module fitted on right-hand side (Dual mount black)	
<b>Group 4:</b> No of Poles	Code	Description	Comments	
	1	Single pole		
	2	Double pole	2 pole or 1+N	
	3	Triple pole		
	4	Four pole	3+N	
<b>Group 5:</b> Module Width	Code	Description	Comments	
	(13)	13 mm module width	13 mm per pole	
<b>Group 6:</b> Mounting	Code	Description	Comments	
	D	DIN rail mount	DIN mount supplied in grey only - 45 mm escutcheon, grey body	
	DM	Dual mount	Dual mount supplied in black only - 57 mm escutcheon, black body	
<b>Group 7:</b> Time Delays	Code	Description	Instantaneous Trip Point (x In)	Comments
	1	Long time delay, high instantaneous trip	10 – 20	Orange handle
	2	Medium time delay	5 – 10	White handle
	3	Short time delay	3 – 5	White handle
	9	Long time delay	7 – 12	White handle
	OP	Instantaneous	None	White handle
<b>Group 8:</b> Current Ratings	Code / Description		Comments	
	0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 20, 25, 30, 32, 35, 40, 45, 50, 60 A		For other ratings, consult CBI	
<b>Group 9:</b>	Code	Description	Comments	
	-	Not applicable	For future use (-)	

*Continues on page 5*

## QZ - Series Miniature Circuit Breakers

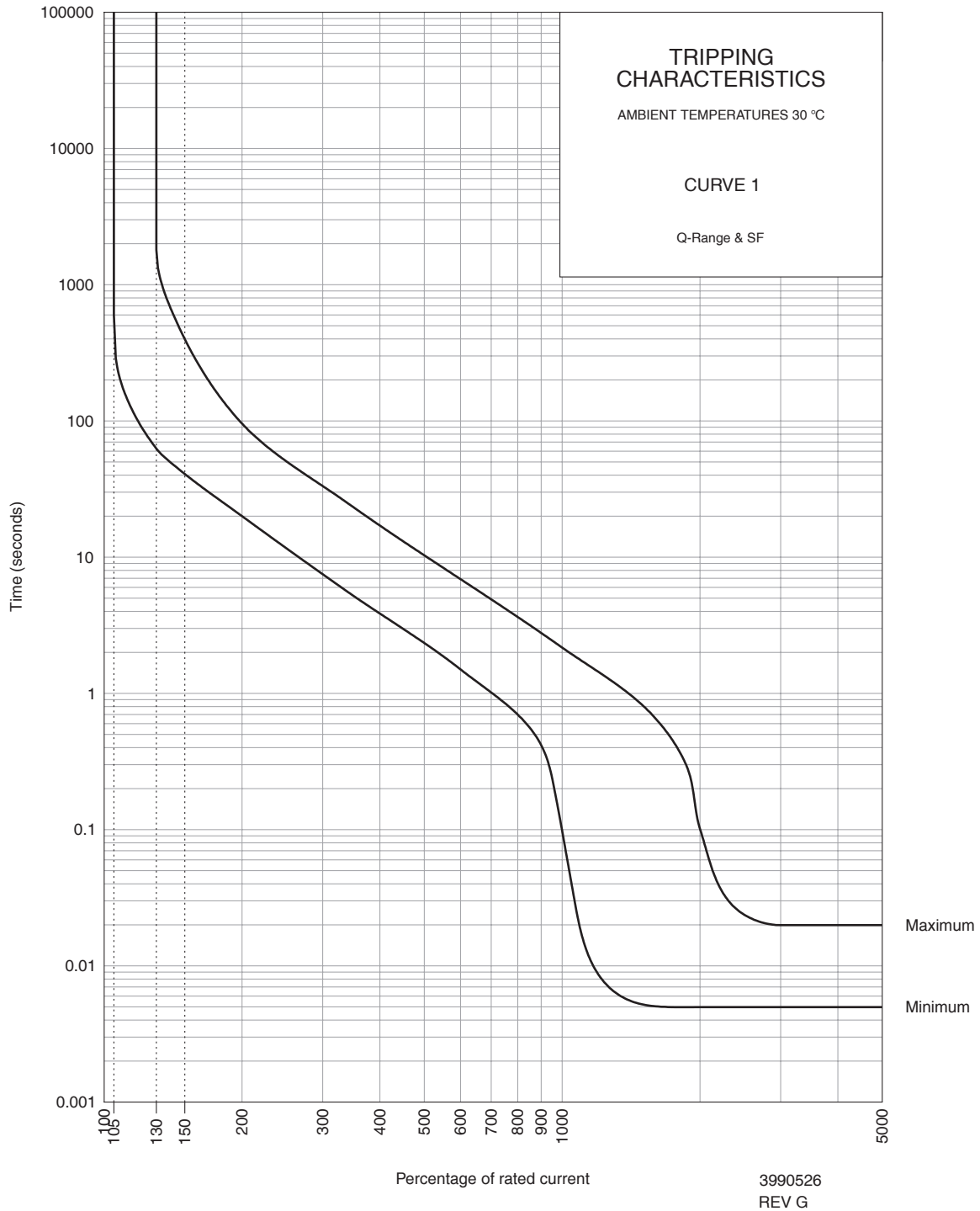
Ordering Information continues

Group 10: Shunt Trip	Code	Description	Comments
	-	Not applicable	If no shunt trip is required
(not certified only offered as special order)	U0	12 Vdc Shunt trip (Flying leads)	Flying leads (+/- 60 mm long)  Recommended pulse duration 100 ms to 60 s  Note: Shunt trip carries no approvals - available as a special offer only
	U1	24 Vdc Shunt trip (Flying leads)	
	U2	48 Vdc Shunt trip (Flying leads)	
	U3	60 Vdc Shunt trip (Flying leads)	
	U4	110 Vdc & 110 - 230 Vac Shunt trip (Fly leads)	
Group 11	Code	Description	Comments
	-	Not applicable	For future use (-)
Group 12: Special Termination	Code	Description	Comments
	R	Ring terminal ready	Terminal screw is removable. Ring lug (5 mm)

*For options not listed, please contact CBI*

# QZ - Series Miniature Circuit Breakers

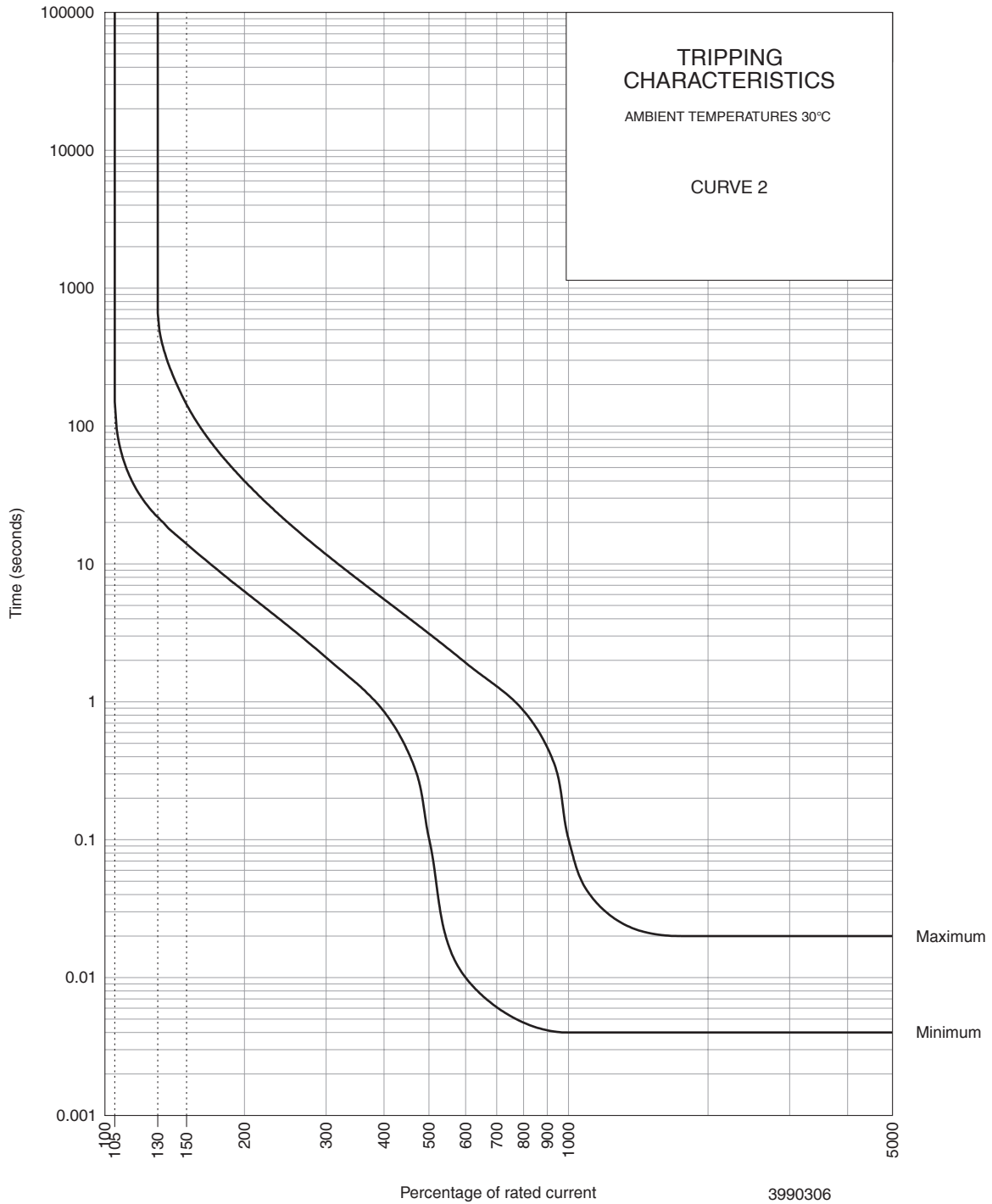
## Time Delay Curve



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	63	45	41	20	7.5	3.8	2.3	1.5	1.01	0.7	0.42	0.1	0.005
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	1800	503	400	96	34	17	10.3	6.8	4.9	3.6	2.8	2.2	0.1

# QZ - Series Miniature Circuit Breakers

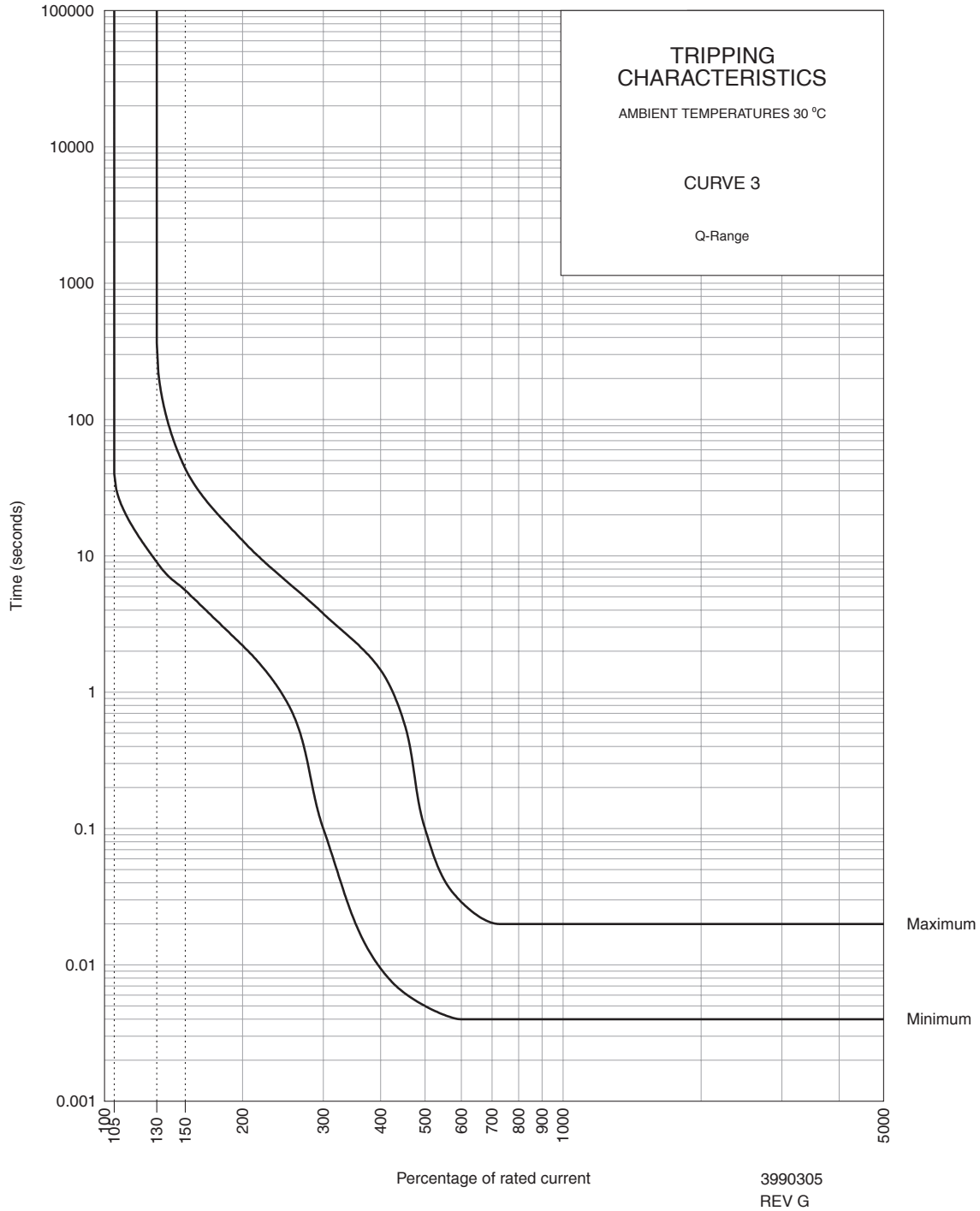
## Time Delay Curve



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

# QZ - Series Miniature Circuit Breakers

## Time Delay Curve

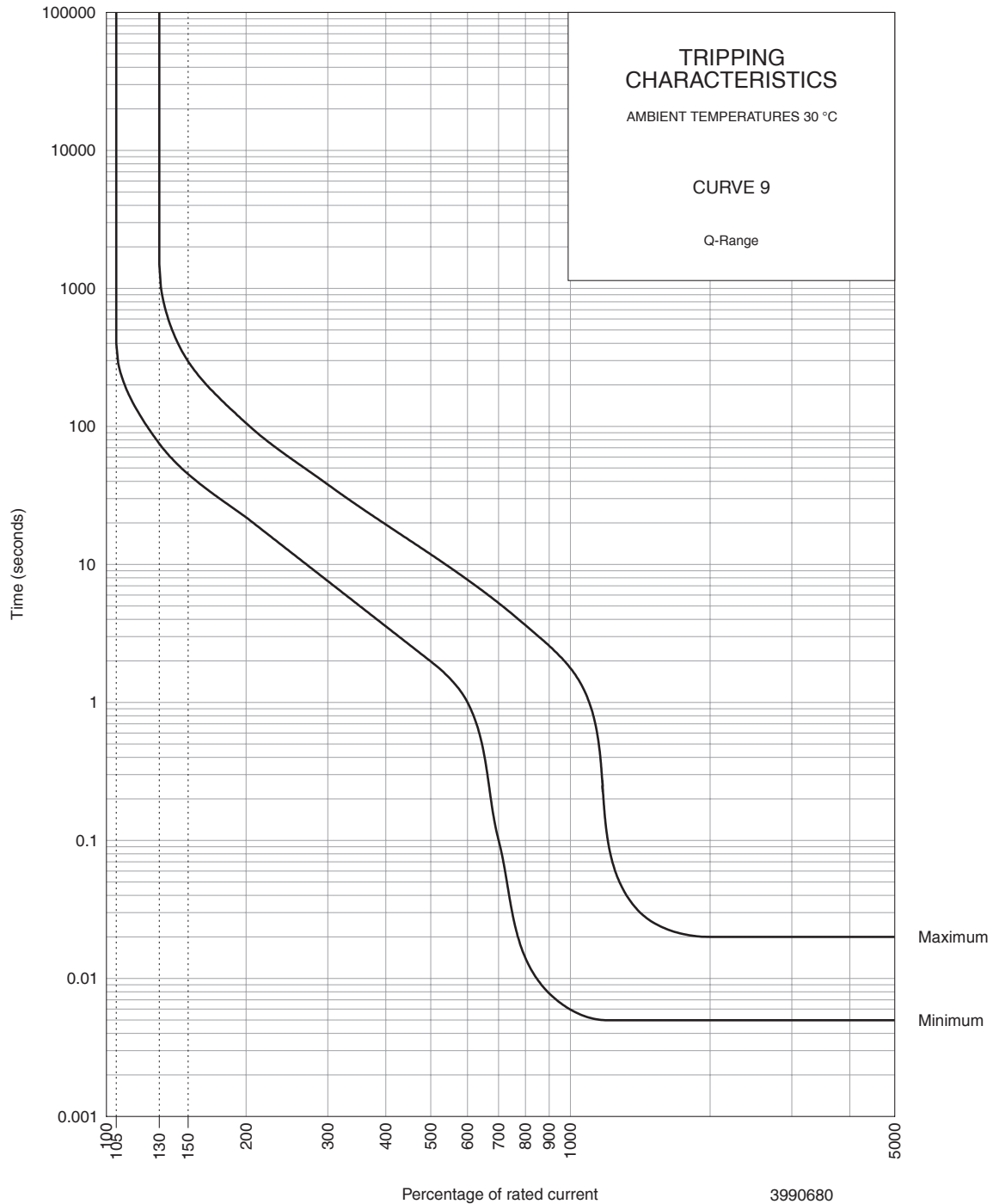


PERCENTAGE OF RATED CURRENT	105%	130%	145%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	2000%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	9	6	5.6	2.2	0.1	0.009	0.005	0.004	0.004	0.004	0.004	0.004	0.004
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	365	57	44	13	3.8	1.45	0.1	0.028	0.02	0.02	0.02	0.02	0.02



# QZ - Series Miniature Circuit Breakers

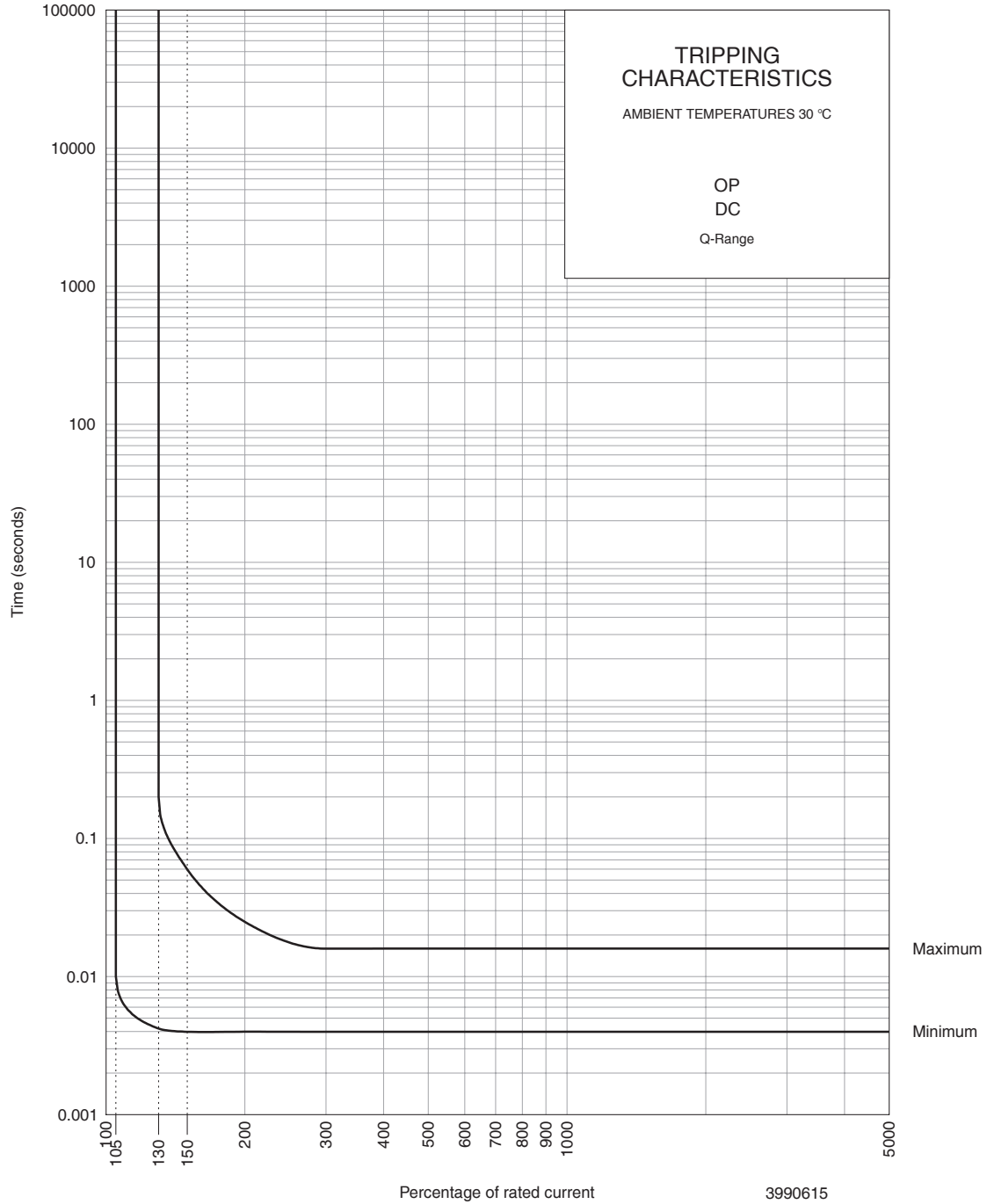
## Time Delay Curve



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

## QZ - Series Miniature Circuit Breakers

### Time Delay Curve

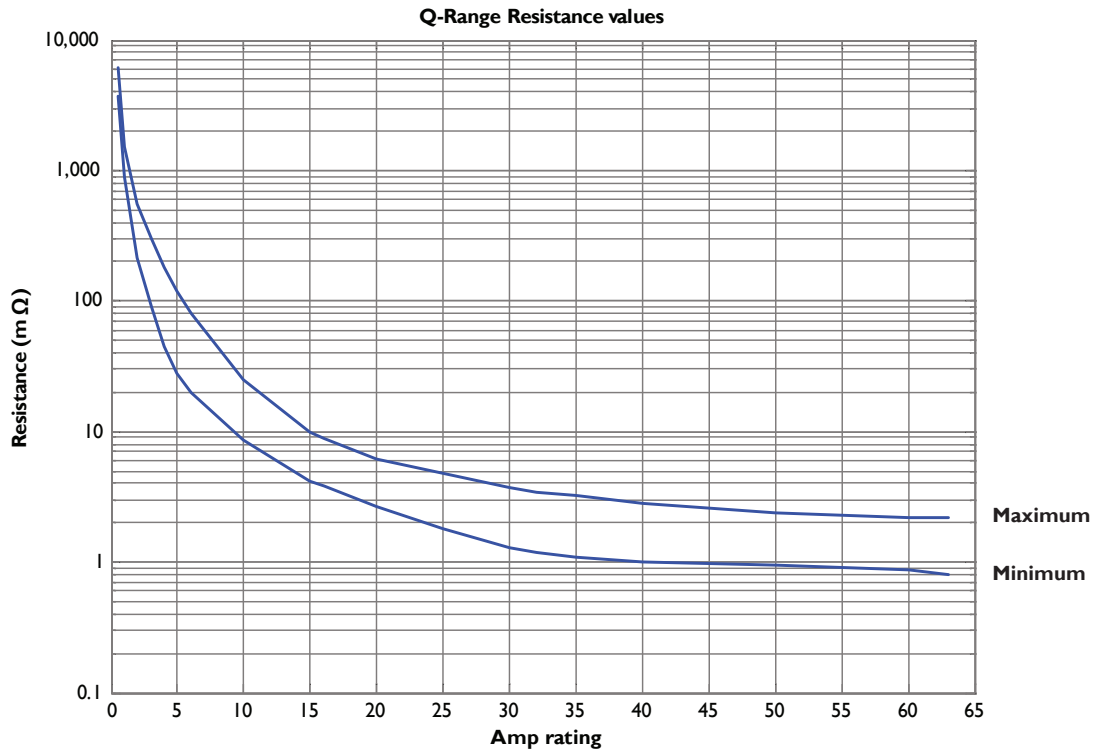


PERCENTAGE OF RATED CURRENT	105%	130%	145%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	2000%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	0.0042	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	0.2	0.07	0.06	0.025	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016

\* 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.

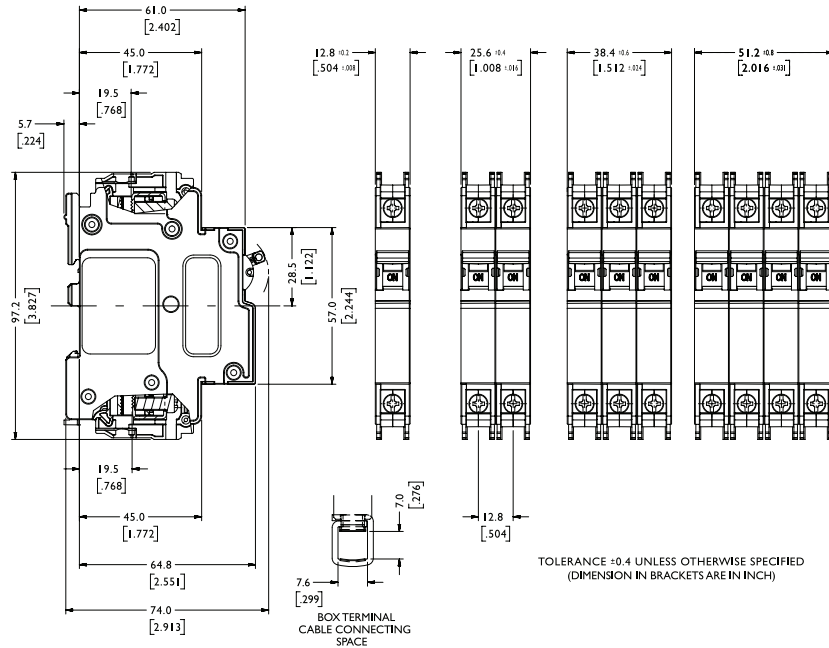
## QZ - Series Miniature Circuit Breakers

### Internal Resistance vs Current Rating

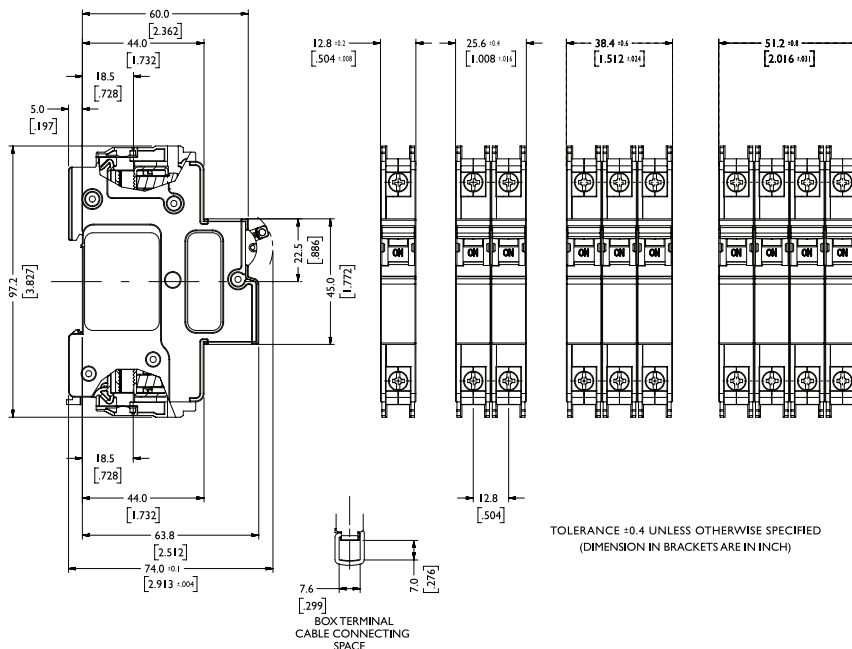


## QZ - Series Miniature Circuit Breakers

### Outline Dimensions: Dual mount



### Outline Dimensions: DIN mount



Please review our Customer Terms and Conditions on [www.cbi-lowvoltage.co.za](http://www.cbi-lowvoltage.co.za)

© CBI (Pty) Ltd. All Rights Reserved.

All rights reserved. Unless otherwise indicated, all materials on these pages are copyrighted by CBI (Pty) Ltd. No part of these pages, either text or image may be used for any purpose other than personal use. Therefore, reproduction, modification, storage in a retrieval system or retransmission, in any form or by any means, electronic, mechanical or otherwise, for reasons other than personal use, is strictly prohibited without prior written permission. CBI (Pty) Ltd reserves the right to alter any details of this document without notice and while every effort is made to ensure the accuracy of the content, no warranty is given as to the accuracy of this document and no responsibility will be accepted for error or misinterpretation and any resulting loss.

#### AUSTRALIA

**CBI-electric: Australia**  
27 Wedgewood Rd, Hallam  
Victoria 3803 Australia  
Tel: +61 3 8752 9300  
Fax: +61 3 9796 5407  
Email: [sales@cbi-electric.com.au](mailto:sales@cbi-electric.com.au)  
Website: [www.cbi-electric.com.au](http://www.cbi-electric.com.au)

#### SOUTH AFRICA

**CBI-electric: low voltage**  
Tripswitch Drive Elandsfontein  
Gauteng South Africa  
Tel: +27 11 928 2000  
Fax: +27 11 392 2354  
Email: [cbi@cbi-electric.com](mailto:cbi@cbi-electric.com)  
[internationalsales@cbi-electric.com](mailto:internationalsales@cbi-electric.com)  
Website: [www.cbi-lowvoltage.com](http://www.cbi-lowvoltage.com)

#### USA

**CBI-electric: North America**  
35 E. Uwchlan Ave Suite 328  
Exton PA 19341 USA  
Tel: +1 610 524 9949  
Fax: +1 610 524 9945  
Email: [info@cbibreakers.com](mailto:info@cbibreakers.com)  
Website: [www.cbibreakers.com](http://www.cbibreakers.com)