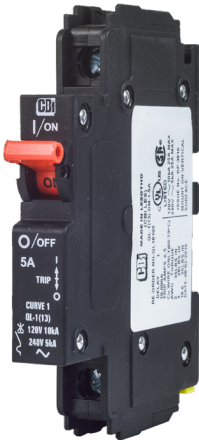
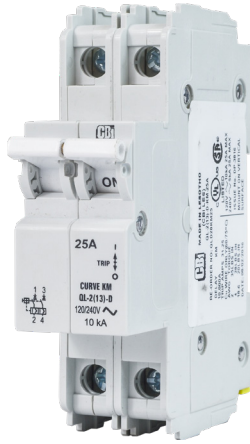


## QL - Series Miniature Circuit Breakers



1 Pole  
Dual (DIN & mini rail) mount



2 Pole  
DIN mount



3 Pole  
Dual (DIN & mini rail) mount

### 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 and CCC approved, CE certified
- UL 489 Listed
- Ratings 0.5 A to 25 A
- 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, **45 mm** front escutcheon (**Grey**)
- Dual (DIN & mini rail) mount, **57 mm** front escutcheon (**Black**)
- Ring terminal ready (Terminal screw is removable)

### Applications

- AC branch circuit protection
- Telecom / datacom equipment
- Lighting control
- UPS equipment
- Energy equipment
- Mobile power generation equipment
- Power conditioning equipment

### 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, 6 A

### Optional Accessories

- Handle lock - QFAP001
- Surface mounting clips - SAAX000
- 57 mm escutcheon blank (Dual mount only) - 235608
- 57 mm safety blank (Dual mount only) - SAEB000



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

## QL - Series Miniature Circuit Breakers

### Technical Data

Product Type	Circuit Breaker			
Approvals	UL 489			
Number of Poles	1	1	2	2 & 3
Operating Voltages	120 Vac	240 Vac	120 / 240 Vac	240 Vac
Minimum Current Rating	0.5 A			
Maximum Current Rating	25 A	20 A	25 A	25 A
Ampere Interrupting Capacity (AIC)	10 kA	5 kA	10 kA	10 kA

Product Type	Circuit Breaker				
Approvals	DIN / EN 60947-2, CE, UKCA				
Number of Poles	1	2 (1+N)	2	3	4 (3+N)
Operating Voltages	240 Vac		415 Vac		
Minimum Current Rating	0.5 A				
Maximum Current Rating	25 A				
Ultimate S/C Breaking Capacity (Icu)	6 kA				

Product Type	Circuit Breaker				
Approvals	GB 14048.2				
Number of Poles	1	2 (1+N)	2	3	4 (3+N)
Operating Voltages	240 Vac		415 Vac		
Minimum Current Rating	1 A				
Maximum Current Rating	25 A				
Specific Ratings (Verify Certification)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 20, 25 A				
Ultimate S/C Breaking Capacity (Icu)	6 kA				

Verify approvals for specific ratings in accordance with the relevant test certificates.  
For other ratings, consult CBI

## QL - Series Miniature Circuit Breakers

### Technical Data

Product Type	QL
Ambient Operating Temperature	-40°C to +85°C
Mounting Options	DIN rail mount, Dual (DIN & mini rail) mount, Surface mounting clip
Time Delay Curves	1, 3, 9, KM, OP
Endurance	10000 operations; 1500 electrical at rated current, 8500 without current (IEC 60947-2 Clause 7.2.4.2)* 6000 electrical operations (UL 489 Clause 7.1.9)*
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 489 Clause 7.1.9)*
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	8 G (IEC 60068-2-27)
Vibration	0.5 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

Circuit Breaker	Wire Size (IEC)	Wire Gauge (UL)	Torque (IEC)	Torque (UL)	Screw Type
Main Terminals	0.75 mm <sup>2</sup> - 25 mm <sup>2</sup>	18 – 3 – AWG	2.5 N.m	20 lbf.in	PH #2 Combi head

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

## QL - Series Miniature Circuit Breakers

### Long Code

Example Code: QL--AT-3(13)-DM-KM-15A-----R

Group	1	2	3	4	5	6	7	8	9	10	11	12	13
Requirement	QL frame	Switch / neutral	Auxiliary switch + trip alarm	Triple pole	13 mm module width	Dual mount	Medium delay curve KM	Current rating 15 A	Future use	No shunt trip	Future use	Ring terminal ready	Customer specific
Long Code	QL	-	AT	3	(13)	DM	KM	15A	-	-	-	R	-

### Ordering Information

Group	Code	Description	Comments
Group 1: Frame Type	QL	Miniature circuit breaker	DIN / EN 60947-2, UL 489 & GB 14048.2
	-	Not applicable	
Group 2: Switch/Neutral	-	Not applicable	
	N	Neutral	Green handle
Group 3: Auxiliary	-	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)
	AT	Auxiliary switch + trip alarm combo (Combined in 1 module)	6.5 mm module fitted on right-hand side (Dual mount)
Group 4: No of Poles	1	Single pole	
	2	Double pole	2 pole or 1+N
	3	Triple pole	
	4	Four pole	3+N
Group 5: Module Width	(13)	13 mm module width	13 mm per pole
	-	Not applicable	
Group 6: Mounting	D	DIN rail mount	DIN mount supplied in grey only - 45 mm front escutcheon, grey body
	DM	Dual (DIN & mini rail) mount	Dual mount supplied in black only - 57 mm front escutcheon, black body
Group 7: Time Delays	1	Long time delay, high instantaneous trip	10 – 20 Orange handle
	3	Short time delay	3 – 5 White handle
	9	Long time delay	7 – 12 White handle
	KM	Medium time delay	6 – 12 White handle
	OP	Instantaneous	None White handle
Group 8: Current Ratings	Code / Description		Comments
	0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 20, 25 A		For other ratings, consult CBI
Group 9:	-	Not applicable	For future use
	-	Not applicable	For future use

## QL - Series Miniature Circuit Breakers

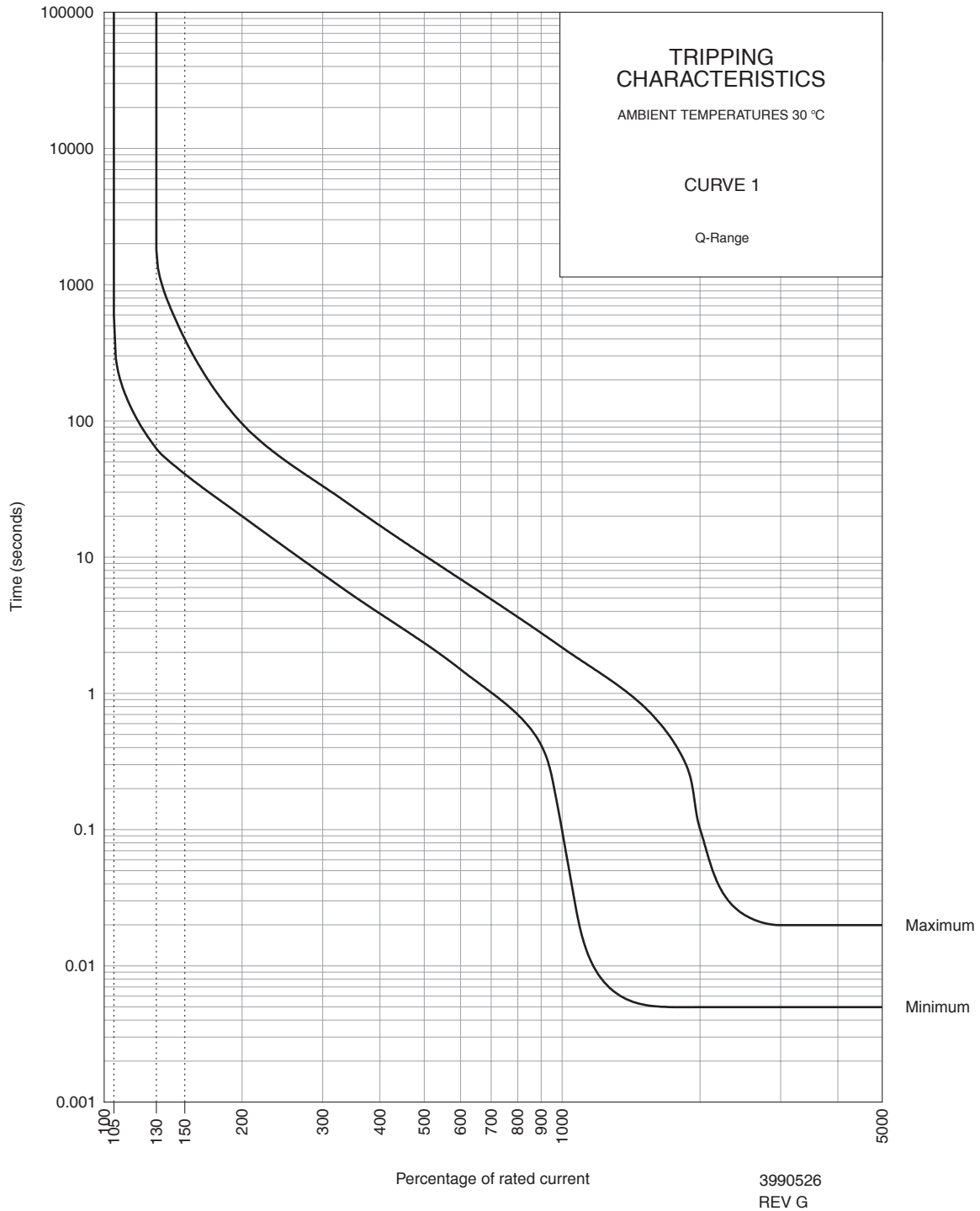
Ordering Information continues

<b>Group 10: Shunt Trip (Not Certified only offered as a special offer)</b>	<b>Code</b>	<b>Description</b>	<b>Comments</b>
	-	Not applicable	N / A
<b>Group 11</b>	<b>Code</b>	<b>Description</b>	<b>Comments</b>
	-	Not applicable	For future use
<b>Group 12: Special Termination</b>	<b>Code</b>	<b>Description</b>	<b>Comments</b>
	R	Ring terminal ready	Terminal screw is removable. Ring lug (5 mm)
<b>Group 13: Customer Specific</b>	<b>Code</b>	<b>Description</b>	<b>Comments</b>
	-	Not applicable	For future use

*For options not listed, please contact CBI*

# QL - Series Miniature Circuit Breakers

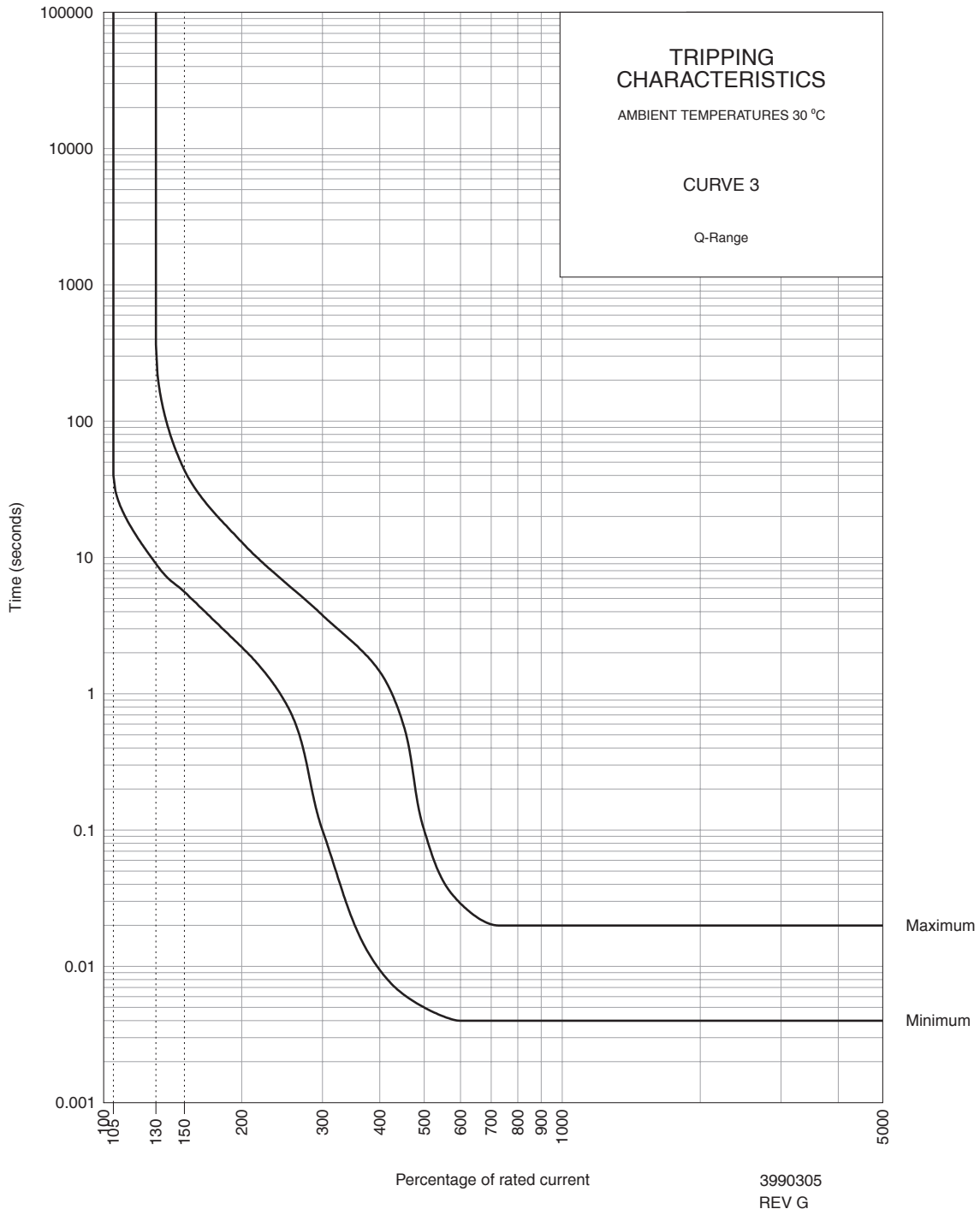
## Time Delay Curve



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

# QL - Series Miniature Circuit Breakers

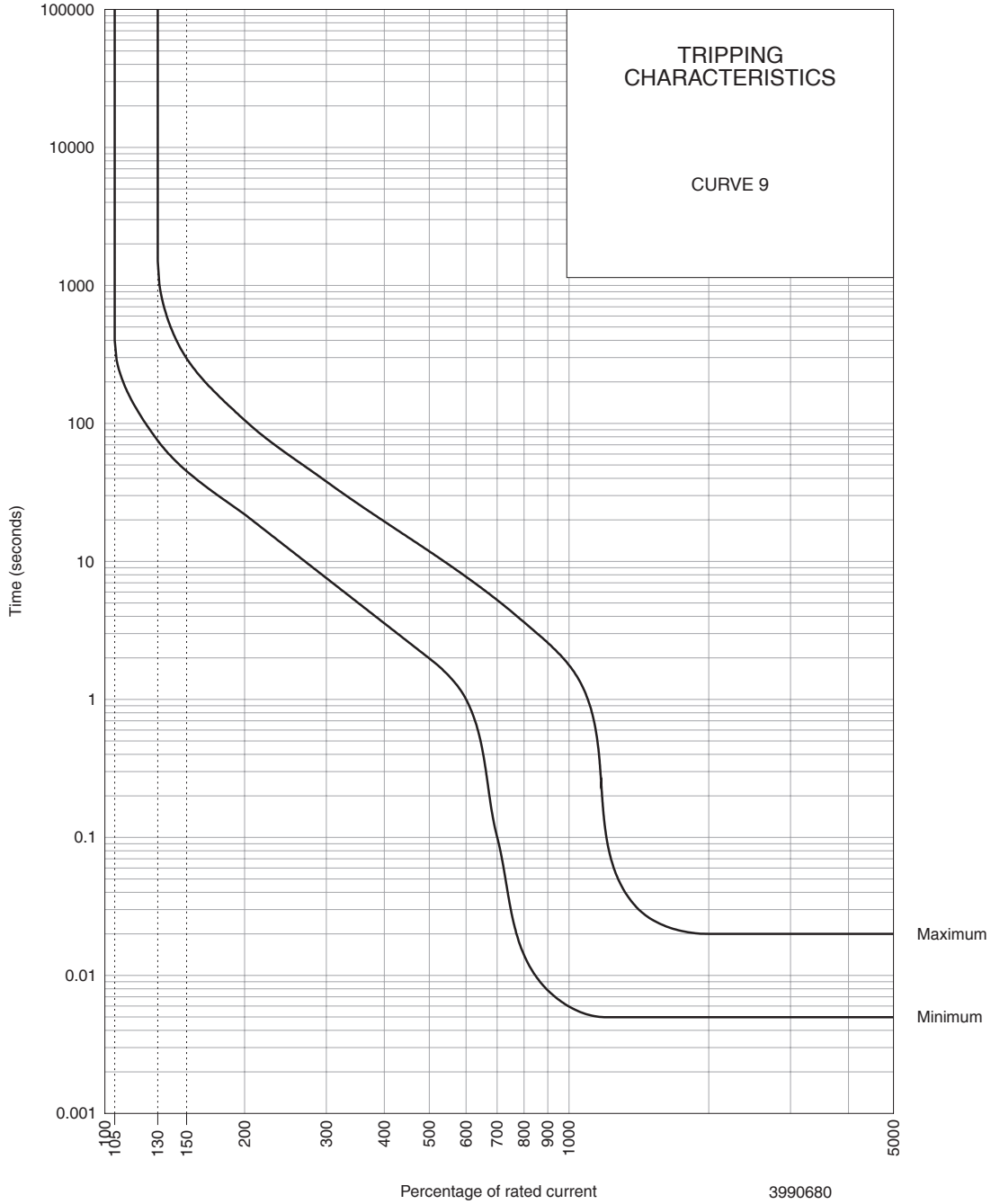
## Time Delay Curve



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

# QL - Series Miniature Circuit Breakers

## Time Delay Curve

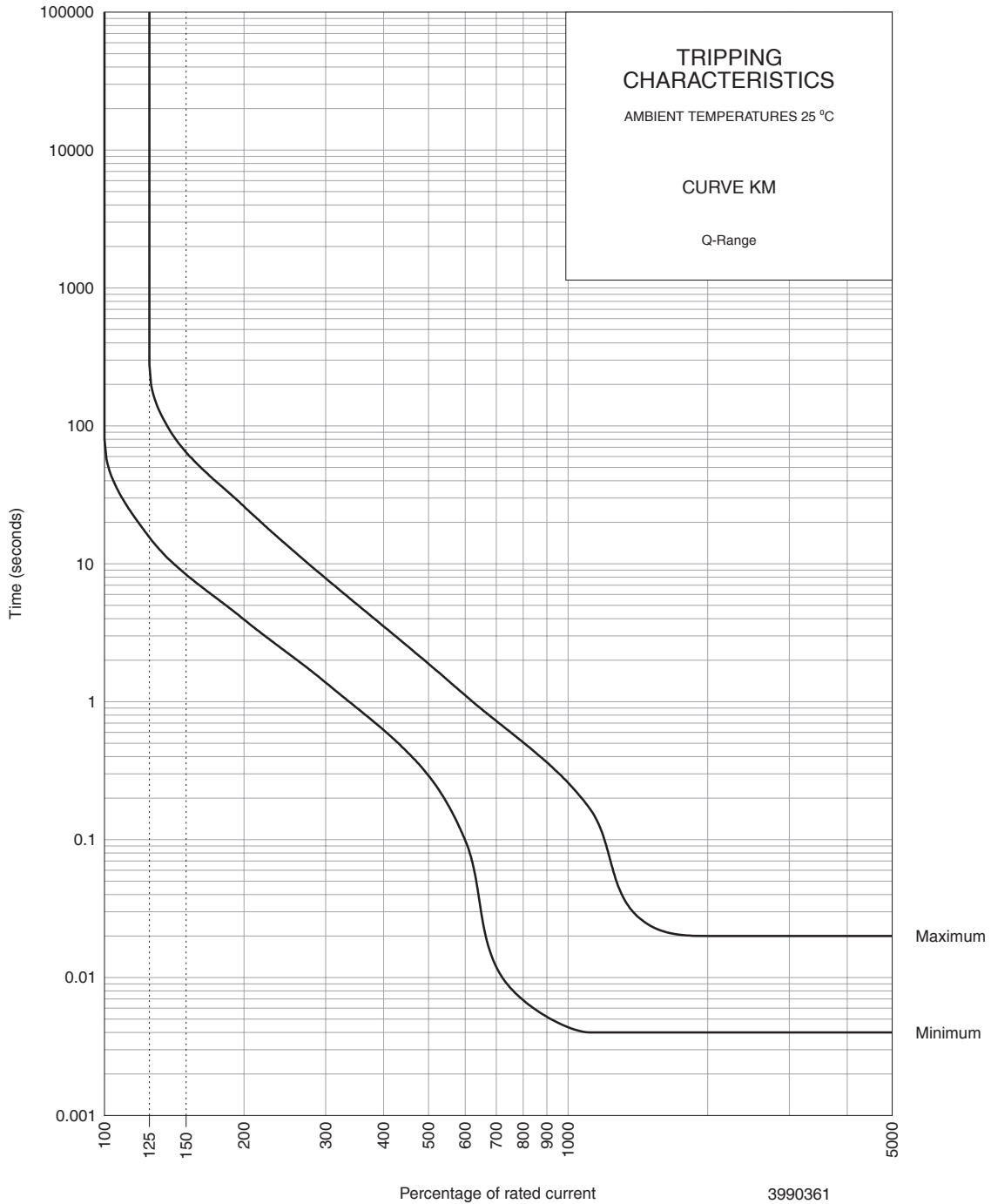


PERCENTAGE OF RATED CURRENT	105%	130%	145%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1200%	2000%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	75	50	45	22	7.6	3.6	2	1	0.1	0.01	0.008	0.005	0.005
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	1500	360	295	100	38	19	11.8	7.7	5.3	3.6	2.6	0.06	0.02



# QL - Series Miniature Circuit Breakers

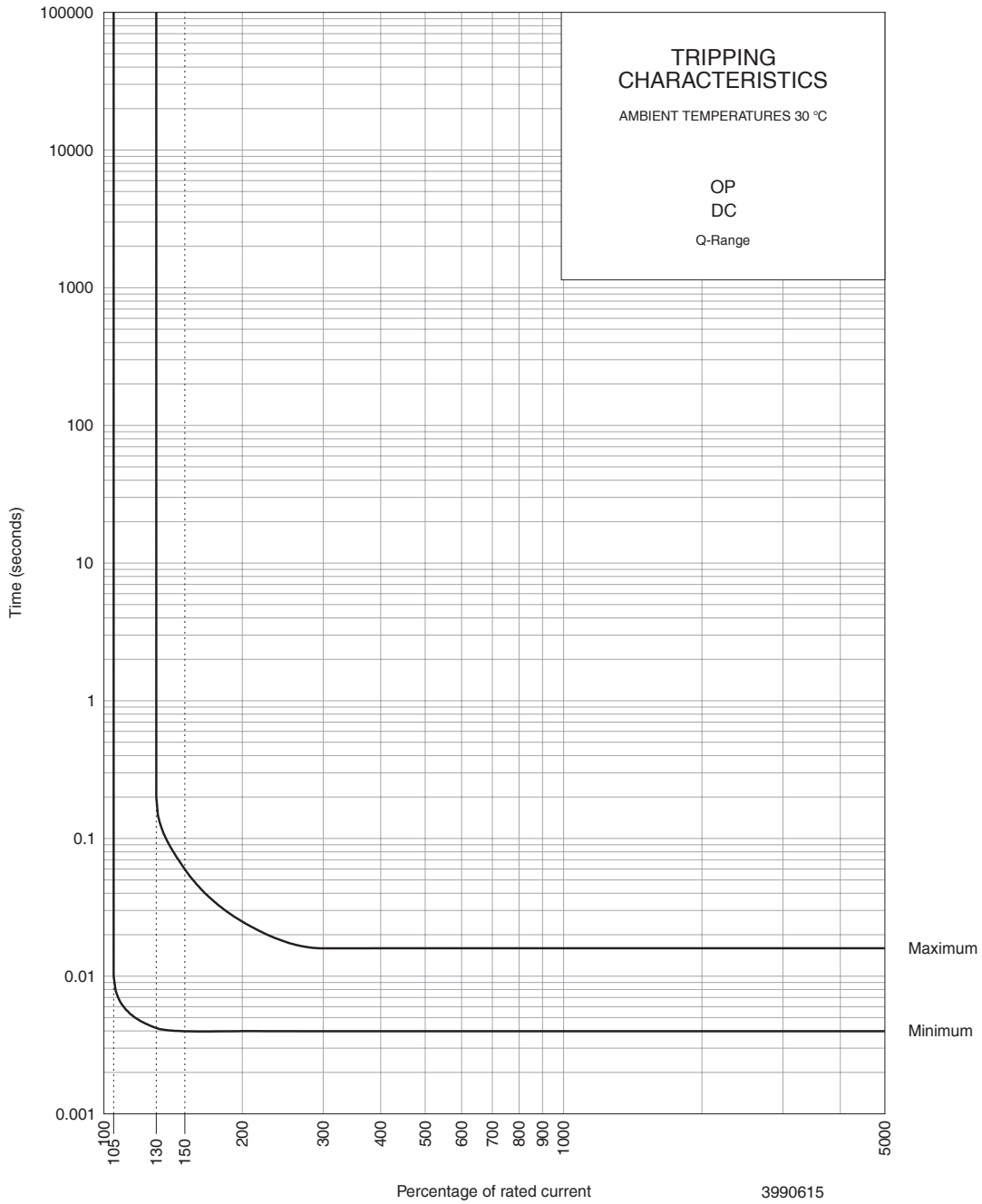
## Time Delay Curve



PERCENTAGE OF RATED CURRENT	100%	125%	130%	145%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	2000%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	16	13.2	9.2	26	1.4	0.6	0.3	0.1	0.01	0.006	0.005	0.004	0.004
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	279	140	74	4	7.8	3.5	1.9	1.1	0.7	0.5	0.36	0.25	0.02

## QL - Series Miniature Circuit Breakers

### Time Delay Curve

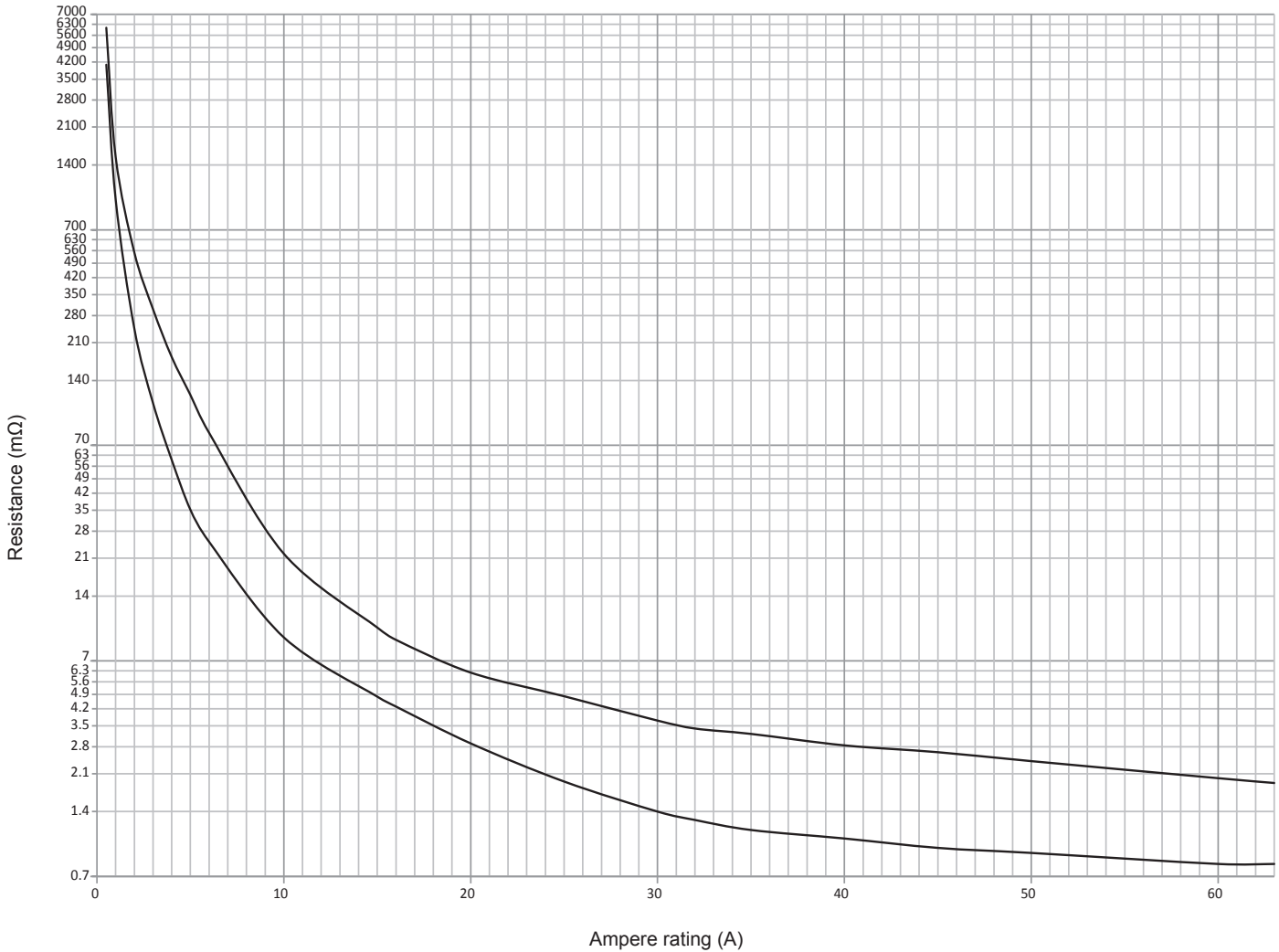


PERCENTAGE OF RATED CURRENT	105%	130%	145%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	2000%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	0.0042	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	0.2	0.07	0.06	0.025	0.016	0.016	0.016	0.016	0.016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

# QL - Series Miniature Circuit Breakers

## Resistance Curve

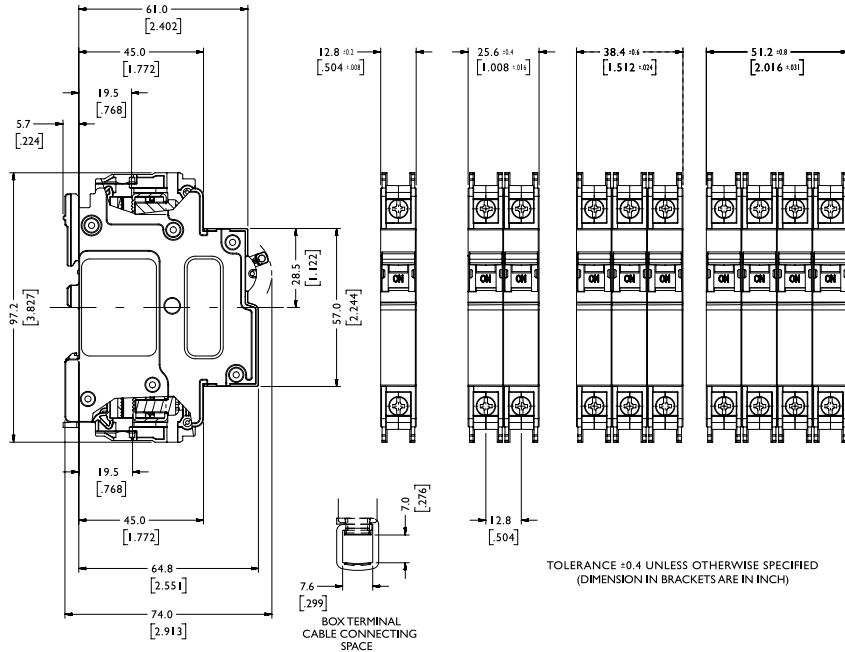


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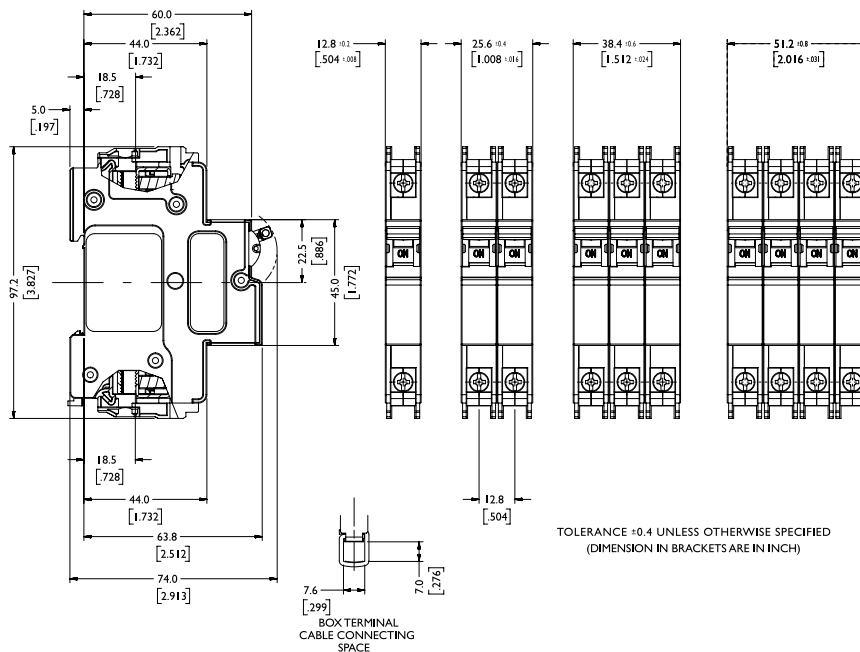
Amp RATING	0.5	1	2	5	6	10	15	20	25	30	32	40	50	60	63
MINIMUM (mΩ)	4085	970	244	35	25	9.0	4.8	2.9	1.9	1.4	1.3	1.1	0.9	0.8	0.8
MAXIMUM (mΩ)	6065	1527	550	120	80	22	10	6.2	4.8	3.7	3.4	2.8	2.4	2.0	1.9

## QL - Series Miniature Circuit Breakers

### Outline Dimensions: Dual (DIN & mini rail) mount



### Outline Dimensions: DIN mount



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#### 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)

#### INDIA

**CBI-electric: Asia**  
 A1, Pushpagiri Residency, 1st Cross  
 2nd Main, Jyothi Nagar, B.G Road  
 Bengaluru 560083, India  
 Tel: +91-9880553153  
 Email: [salesasia@cbi-electric.com](mailto:salesasia@cbi-electric.com)  
 Website: [www.cbibreakers.com](http://www.cbibreakers.com)  
 Website: [www.cbi-lowvoltage.com](http://www.cbi-lowvoltage.com)

#### 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  
 E-mail: [info@cbibreakers.com](mailto:info@cbibreakers.com)  
 Website: [www.cbibreakers.com](http://www.cbibreakers.com)