

## Защитные автоматические выключатели серии "QL" Технические характеристики



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Белгород (4722)40-23-64  
Брянск (4832)59-03-52  
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Волгоград (844)278-03-48  
Вологда (8172)26-41-59  
Воронеж (473)204-51-73  
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Иваново (4932)77-34-06  
Ижевск (3412)26-03-58  
Казань (843)206-01-48

Калининград (4012)72-03-81  
Калуга (4842)92-23-67  
Кемерово (3842)65-04-62  
Киров (8332)68-02-04  
Краснодар (861)203-40-90  
Красноярск (391)204-63-61  
Курск (4712)77-13-04  
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Магнитогорск (3519)55-03-13  
Москва (495)268-04-70  
Мурманск (8152)59-64-93  
Набережные Челны (8552)20-53-41  
Нижний Новгород (831)429-08-12  
Новокузнецк (3843)20-46-81

Новосибирск (383)227-86-73  
Омск (3812)21-46-40  
Орел (4862)44-53-42  
Оренбург (3532)37-68-04  
Пенза (8412)22-31-16  
Пермь (342)205-81-47  
Ростов-на-Дону (863)308-18-15  
Рязань (4912)46-61-64  
Самара (846)206-03-16  
Санкт-Петербург (812)309-46-40  
Саратов (845)249-38-78  
Севастополь (8692)22-31-93  
Симферополь (3652)67-13-56  
Смоленск (4812)29-41-54

Сочи (862)225-72-31  
Ставрополь (8652)20-65-13  
Сургут (3462)77-98-35  
Тверь (4822)63-31-35  
Томск (3822)98-41-53  
Тула (4872)74-02-29  
Тюмень (3452)66-21-18  
Ульяновск (8422)24-23-59  
Уфа (347)22948 -12  
Хабаровск (4212)92-98-04  
Челябинск (351)202-03-61  
Череповец (8202)49-02-64  
Ярославль (4852)69-52-93

## QL - 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 and CCC approved, CE certified
- UL listed (CSA / UL 489)
- Ratings 0.1 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
- Reset immediately after overload
- DIN mount product in grey shells
- Dual mount product in black shells
- Current limiting capability
- Ring terminal ready (terminal screw is removable)
- Suitable to use for electrical isolation

### Auxiliary Switch, Trip Alarm & Combo:

#### Features

- Auxiliary switch (DIN and Dual Mount)
- Auxiliary switch + trip alarm (Dual Mount only)
- Trip alarm (Dual Mount only)
- AC and DC voltages
- UL 489 listed (auxiliary switch: 6 A 250 V AC, 0.5 A 80 V DC)
- IEC 60947-5-1 approved (auxiliary switch: 6 A 240 V AC, 0.5 A 110 V DC; trip alarm: 6 A 240 V AC, 0.5 A 110 V DC)
- Factory fitted
- Attached to right hand side of circuit breaker
- Compact 6.5 mm width

### Applications

- AC branch circuit protection (UL 489, IEC / EN 60847-2)
- Telecom / datacom equipment
- Lighting control
- UPS equipment
- Alternative energy equipment
- Mobile power generation equipment
- Power conditioning equipment

### Optional Accessories

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

### Approvals



(IEC / EN 60947-2)



(UL 489)



## QL - Series Miniature Circuit Breakers

### Technical Data

Product Type	Circuit Breaker				
Approvals	IEC / EN 60947-2, VDE, CE, EAC				
Number of Poles	1	2 (1+N)	2	3	4 (3+N)
Operating Voltages	240 V AC		415 V AC		
Minimum Current Rating	0.1 A				
Maximum Current Rating	25 A				
Specific Ratings (Verify Certification)	0.1, 0.2, 0.3, 0.4, 0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 20, 25 A				
Interrupting Capacity	6 kA				

Product Type	Circuit Breaker			
Approvals	UL 489			
Number of Poles	1	1	2	3
Operating Voltages	120 V AC	240 V AC	120 / 240 V AC	240 V AC
Minimum Current Rating	0.1 A			
Maximum Current Rating	25 A	20 A	25 A	25 A
Specific Ratings (Verify Certification)	0.1, 0.2, 0.3, 0.4, 0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 20, 25 A			
Interrupting Capacity	10 kA	5 kA	10 kA	5 kA

Product Type	Circuit Breaker		
Approvals	CCC		
Number of Poles	1	2 (1+N)	2
Operating Voltages	240 V AC	240 V AC	240 V AC
Minimum Current Rating	0.1 A		
Maximum Current Rating	25 A	25 A	25 A
Specific Ratings (Verify Certification)	0.1, 0.2, 0.3, 0.4, 0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 20, 25 A		
Interrupting Capacity	6 kA		

## QL - Series Miniature Circuit Breakers

### Technical Data

Product Type	QL
Operating Temperature Range	-40 °C to +85 °C
Mounting Options	DIN Rail, Dual mounting (DIN & Mini), surface mounting clip
Time Delay Curves	1, 3, 9, KM, OP
Endurance	10000 operations - 1500 electrical at rated current and voltage (IEC 60947-2) 6000 electrical operations (UL 489)
Dielectric Strength	1480V (single pole) / 1830V (multi pole), 50 Hz for one minute after testing
Weight	102 g per pole, 160 g with auxiliary (unpacked)
Humidity	35 to 85% relative
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.

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

Breaker QL	Wire Size mm <sup>2</sup> (IEC)	Wire Gauge (UL)	Torque (IEC)	Torque (UL)	Comments
1 Pole & 2 Pole	0.75 - 35 mm <sup>2</sup>	18 - 2 - AWG	2.5 Nm	20 in-lb	Pozidriv #2 Combi head

## QL - Series Miniature Circuit Breakers

### Ordering Information

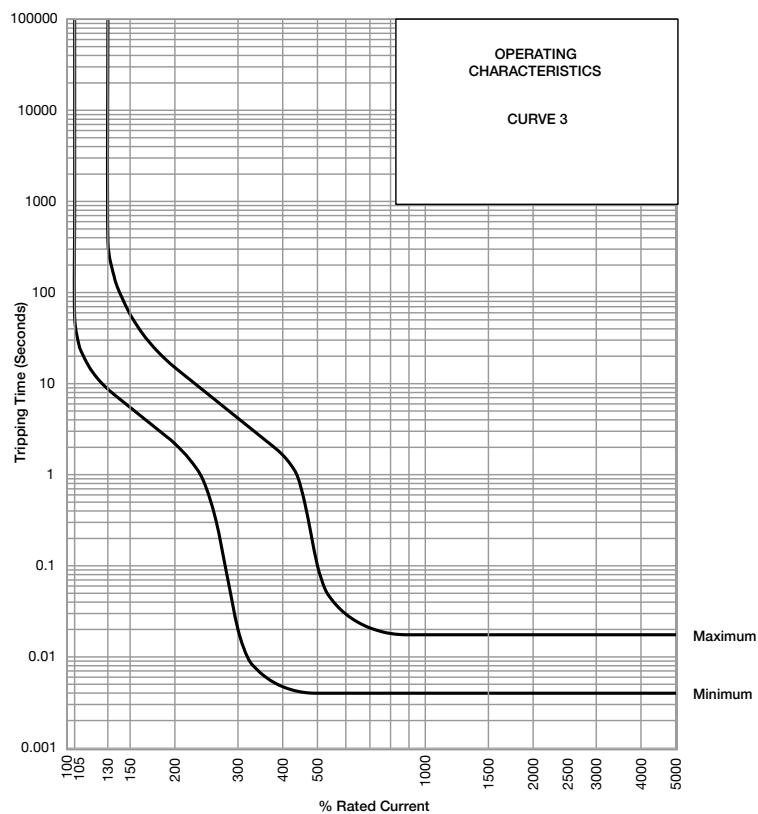
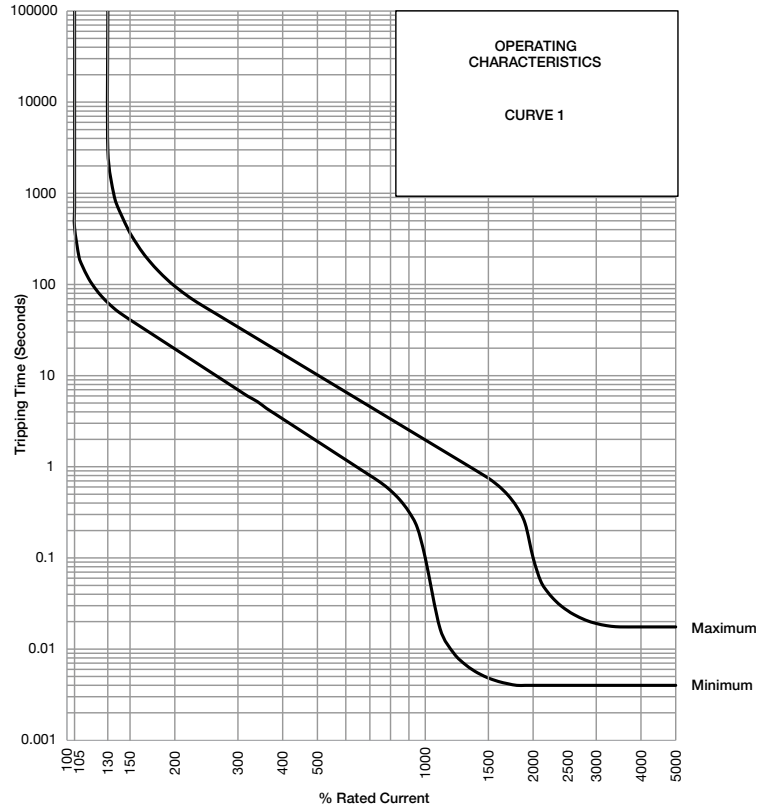
Example Code: **QL--AT-3(13)-DM-KM-15A-----R**

Group	1	2	3	4	5	6	7	8	9	10	11	12
<b>Requirement</b>	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
<b>Long Code</b>	<b>QL</b>	-	<b>AT</b>	<b>3</b>	<b>(13)</b>	<b>DM</b>	<b>KM</b>	<b>15A</b>	-	-	-	<b>R</b>

Group	Code	Description	Comments
<b>Group 1: Frame Type</b>	QL	13 mm wide miniature circuit breaker	
<b>Group 2: Switch/Neutral</b>	-	Not applicable	Overload poles do not have any further coding
	N	Neutral	Green handle
<b>Group 3: Auxiliary</b>	-	Not applicable	Use this code if no auxiliary used
	A	Auxiliary switch (1 x Aux in 1 module)	6.5 mm module fitted on right-hand side
	AA	Double auxiliary switch (2 x Aux in 1 module)	6.5 mm module fitted on right-hand side
	T	Trip alarm (1 x trip alarm in 1 module)	6.5 mm module fitted on right-hand side
	AT	Auxiliary switch + trip alarm combo (combined in 1 module)	6.5 mm module fitted on right-hand side
<b>Group 4: No of Poles</b>	1	Single pole	
	2	Double pole	2 pole or 1+N
	3	Triple pole	
	4	Four pole	3+N only
<b>Group 5: Module Width</b>	(13)	13 mm module width	13 mm per pole
<b>Group 6: Mounting</b>	D	DIN rail mount - 45 mm Escutcheon, grey body	DIN mount supplied in grey only
	DM	Dual mount - 57 mm Escutcheon, black body	Dual mount supplied in black only
<b>Group 7: Time Delays</b>	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
<b>Group 8: Current Ratings</b>	Code / Description		Comments
	0.1, 0.2, 0.3, 0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 20, 25 A		Ratings available vary depending on certification * Other ratings are available as special orders. Check availability.
<b>Group 10: Shunt Trip (approvals pending)</b>	Code	Description	Comments
	-	Not applicable	Use this code if no shunt trip is used
	V0	100 – 480 V AC	Fly leads (approximately 60 mm long)
	V5	100 – 480 V AC	Internally connected
	Other voltages are available as special orders. Check availability.		
<b>Group 11</b>	Code	For future use (-)	
<b>Group 12: Special Termination</b>	Code	Description	Comments
	-	No special termination	Use this code if no special terminations are used
	R	Ring terminal ready (box terminal screw is removable)	Terminal screw is removable

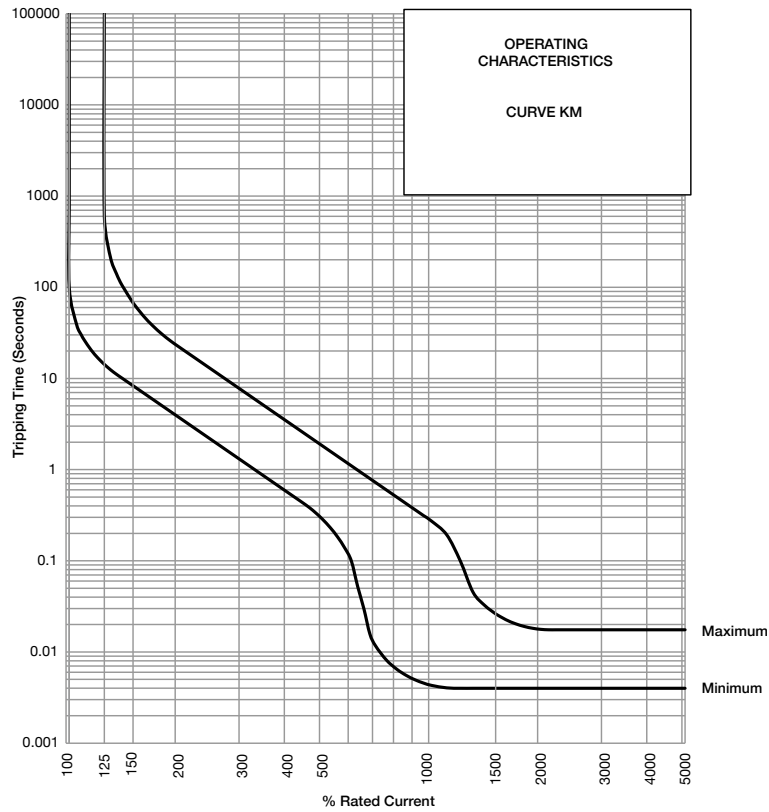
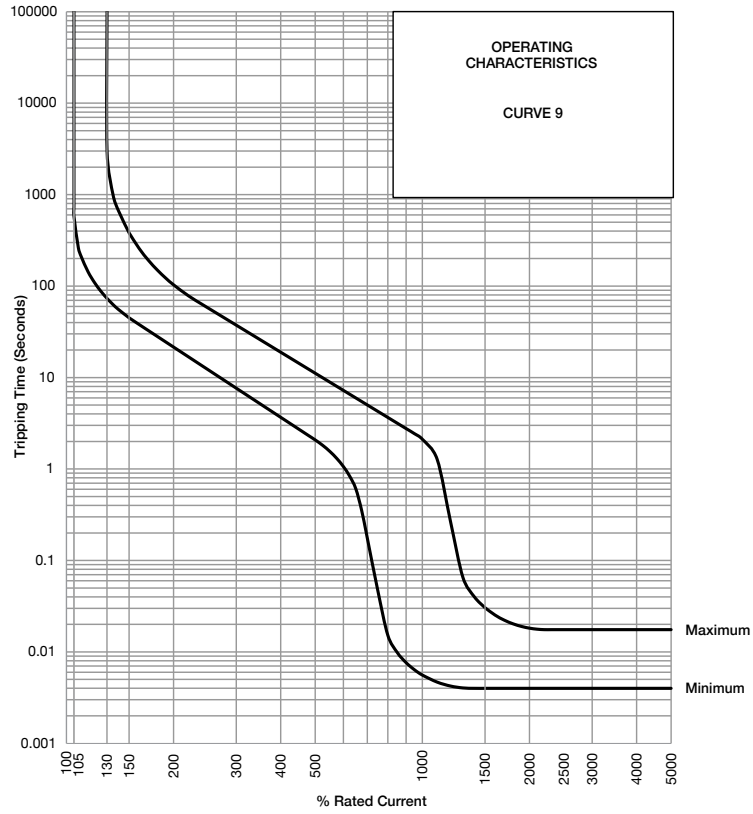
# QL - Series Miniature Circuit Breakers

## Time Delay Curves



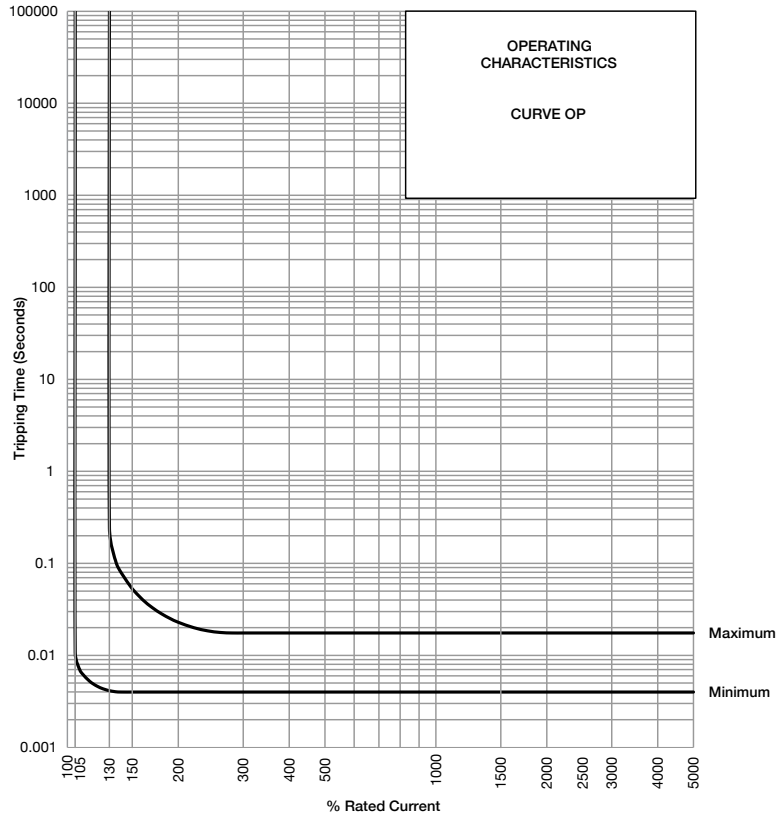
## QL - Series Miniature Circuit Breakers

### Time Delay Curves



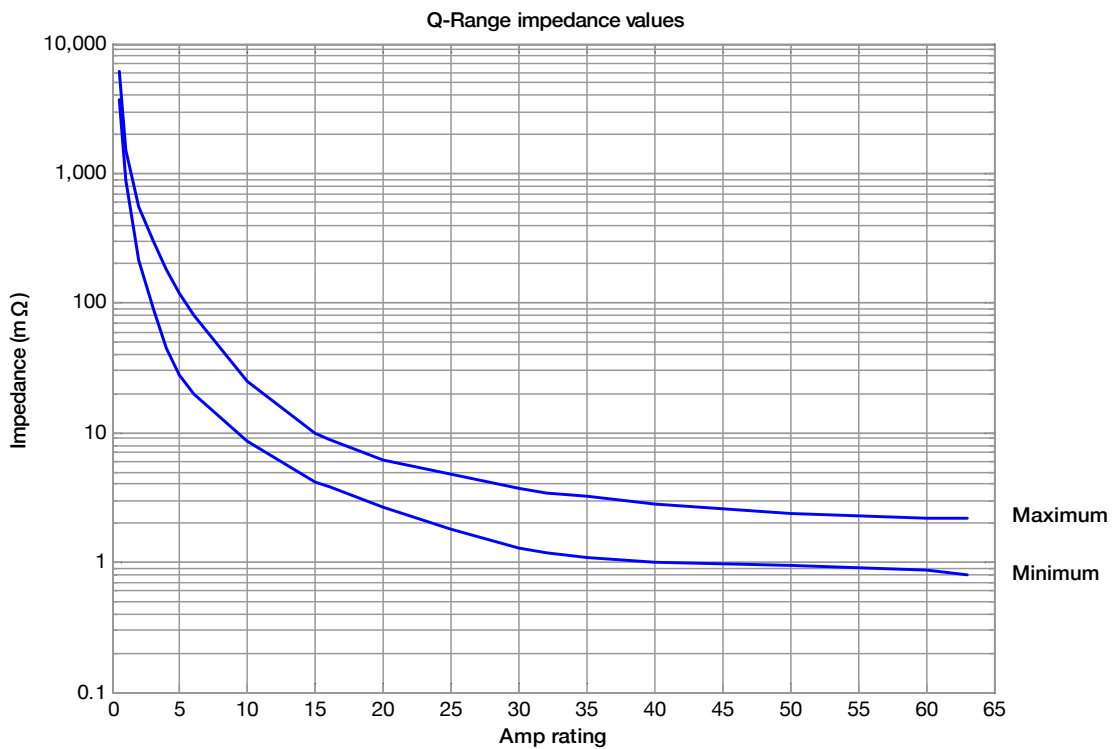
# QL - Series Miniature Circuit Breakers

## Time Delay Curves



\* 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.

## Internal Impedance vs Current Rating







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<b>Вологда</b> (8172)26-41-59	<b>Магнитогорск</b> (3519)55-03-13	<b>Самара</b> (846)206-03-16	<b>Уфа</b> (347)22948 -12
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