

Q-SERIES
QF(13)-FRAME
MINIATURE CIRCUIT
BREAKERS



1 Pole
DIN mount

2 Pole
DIN mount

3 Pole
Dual (DIN & mini rail) mount

4 (3 Pole + Neutral)
Dual (DIN & mini rail) mount

FEATURES

- AC circuit breaker
- Hydraulic-magnetic technology
- 100% rating capability, independent of ambient temperature
- One, two, three and four pole
- VDE, UL and CQC certified
- CCC, UKCA, CE, VC 8036 (SANS 556-1) and AS/NZS 3111 compliant
- Ratings 0.1 A to 25 A
- Optional shunt trip (approvals pending)
- Wide range of time delays & operating currents
- Precision tripping characteristics
- Ultra compact – 13 mm wide module
- Trip indication with mid-trip position
- Can be switched on immediately after tripping
- DIN mount, 45 mm front escutcheon (grey)
- Dual (DIN & mini rail) mount, 57 mm front escutcheon (black)
- Suitable to use for electrical isolation
- Shell designed for easier installation onto busbar

APPLICATIONS

- AC branch circuit protection (DIN/EN 60947-2)
- Switch disconnecter (DIN/EN 60947-3)
- Telecom/datacom equipment
- Lighting control
- UPS equipment
- Alternative energy equipment
- Mobile power generation equipment
- Railway signalling equipment
- Residential equipment
- Industrial equipment

AUXILIARY SWITCH, TRIP ALARM & COMBO: FEATURES

- Factory fitted
- Attached to right hand side of the circuit breaker
- Compact 6.5 mm width
- 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

OPTIONAL ACCESSORIES

- Handle lock - QFAP001
- Surface mounting clips - SAAX000
- Busbar - SABBM54
- 57 mm escutcheon blank (dual mount only) - 235608
- 57 mm safety blank (dual mount only) - SAEB000

APPROVALS



VC 8036

AS/NZS 3111



(DIN/EN 60947-2/3)



(GB/T 14048.2)



(EN/IEC 60947- 2/3)



TECHNICAL DATA

ELECTRICAL	
Dielectric Strength	1 000 - 2 000 Vac for one minute (IEC 60947-2 Clause 8.3.3.3)*
Rated Impulse Withstand Voltage	4 kV (IEC 60947-2 Clause 8.3.3.2)
Time Delay Curves	1, 2

MECHANICAL	
Endurance	10 000 operations; 1 500 with current, 8 500 without current (IEC 60947-2 Clause 7.2.4.2)*

ENVIRONMENTAL	
Operating Temperature Range	-40°C to +85°C
Altitude	Certification tests done at altitude ≈ 2 000 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Flammability	I3 - Ignition does not persist at 850°C after glow wire is withdrawn with an oxygen index of ≥ 28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.

PHYSICAL	
Mounting Options	DIN rail mount, dual (DIN & mini rail) mount, surface mount
Number of poles	1, 2, 2 (1+N), 3, 4 (3+N)
Weight	102 g per pole, 160 g with auxiliary (depending on rating) (unpacked)
Standard Colours	Shell - black (dual) or grey (DIN) Handle - white, orange or green

* Refer to the standard for details

Circuit Breaker	Wire Size (IEC)	Wire Gauge (UL)	Torque (IEC)	Torque (UL)	Comments
Main Terminals	0.75 mm ² - 25 mm ²	18 – 3 AWG	2.5 N.m	20 lbf.in	Pozidriv #2 Combi head

Auxiliary Module	
Auxiliary Switch	Dual mounting & DIN mounting
Trip Alarm	Dual mounting
Auxiliary Switch / Trip Alarm Combo	Dual mounting

TECHNICAL DATA

Approvals	VC 8036 (SANS 556-1)				
Product Type	Circuit Breaker				
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				
Ultimate S/C Breaking Capacity (Icu)	5 kA				

Approvals	DIN/EN 60947-2, VDE, CE, UKCA, EAC, GB/T 14048.2				
Product Type	Circuit Breaker				
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				
Ultimate S/C Breaking Capacity (Icu)	6 kA				

Approvals	AS/NZS 3111				
Product Type	Circuit Breaker				
Number of Poles	1	2	3	4 (3+N)	
Operating Voltages	240 Vac	415 Vac			
Minimum Current Rating	1 A				
Maximum Current Rating	25 A				
Ultimate S/C Breaking Capacity (Icu)	6 kA				

Approvals	SANS 60947-3, DIN/EN 60947-3				
Product Type	Switch Disconnecter				
Number of Poles	1	2	3	4 (3+N)	
Operating Voltages	240 Vac	415 Vac			
Current Rating	63 A				
Rated S/C Withstand Capacity (Icw)	6 kA, 50 ms				

Approvals	UL 1077				
Product Type	Supplementary Protector				
	Tested without series fuse				
Number of Poles	1	2			
Operating Voltages	120 Vac	120/240 Vac	120/240 Vac		
Minimum Current Rating	0.1 A		10 A		
Maximum Current Rating	25 A		20 A		
Short Circuit Capacity	5 kA				

LONG CODE

Example Code: QF--AT-3(13)-DM-2-15A-----

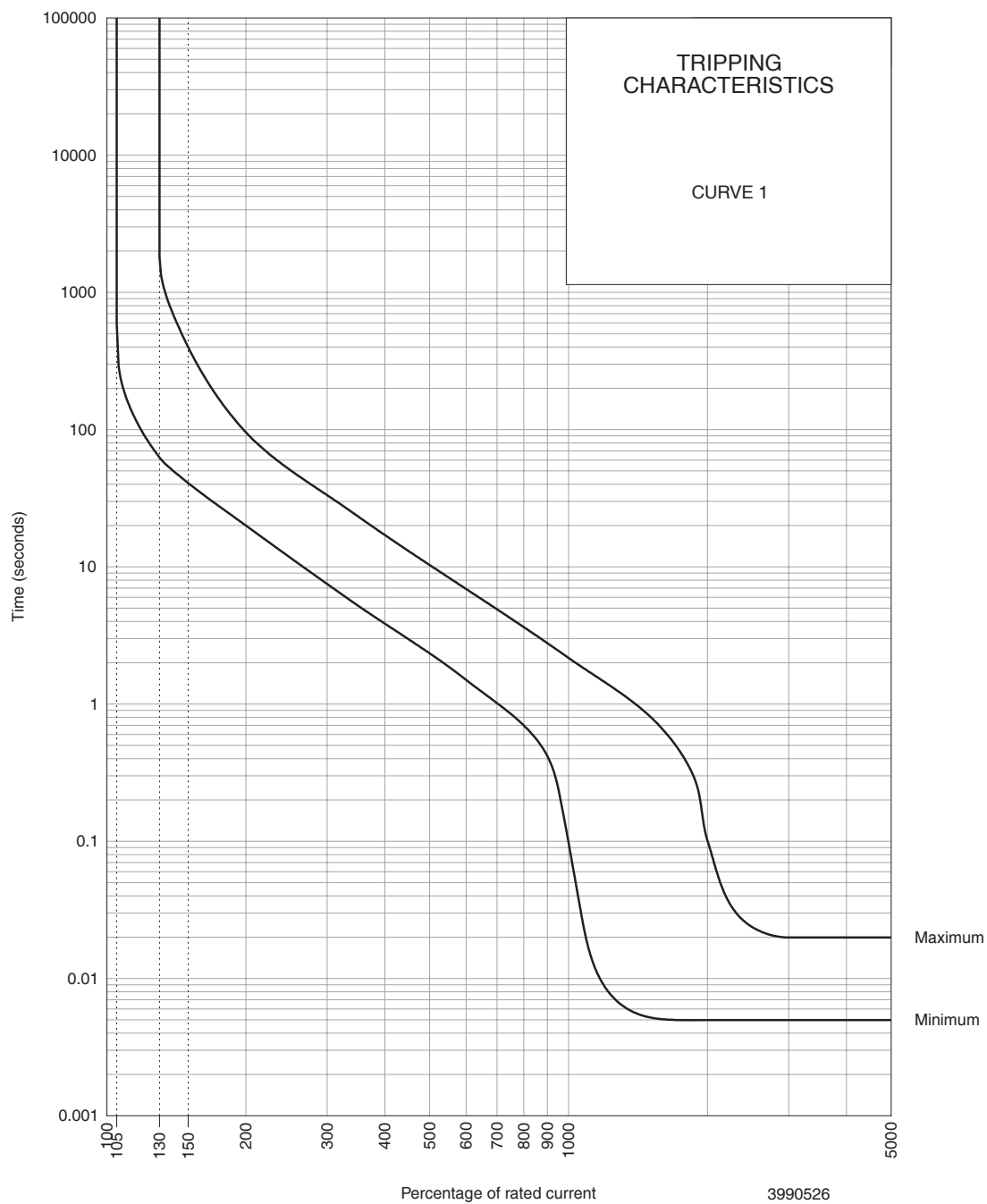
Group	1	2	3	4	5	6	7	8	9	10	11	12	13
Requirement	QF frame	Switch / neutral	Auxiliary switch + trip alarm	Triple pole	13 mm module width	Dual mount	Medium delay curve 2	Current rating 15 A	Future use	Shunt trip	Special requirement	Special termination	Customer specific
Long Code	QF	-	AT	3	(13)	DM	2	15 A	-	-	-	-	-

ORDERING INFORMATION

Group 1: Frame Type	Code	Description	Comments
Group 1: Frame Type	QF	Miniature circuit breaker	
Group 2: Switch/Neutral	Code	Description	Comments
Group 2: Switch/Neutral	-	Not applicable	Overload poles do not have any further coding
Group 2: Switch/Neutral	S	Switch	Green handle
Group 2: Switch/Neutral	N	Neutral	Green handle
Group 3: Auxiliary	Code	Description	Comments
Group 3: Auxiliary	-	Not applicable	Use this code if no auxiliary used
Group 3: Auxiliary	A	Auxiliary switch (1 x auxiliary in 1 module)	6.5 mm module fitted on right-hand side
Group 3: Auxiliary	T	Trip alarm (1 x trip alarm in 1 module)	6.5 mm module fitted on right-hand side (dual mount only)
Group 3: Auxiliary	AT	Auxiliary switch + trip alarm combo (combined in 1 module)	6.5 mm module fitted on right-hand side (dual mount only)
Group 4: No of Poles	Code	Description	Comments
Group 4: No of Poles	1	Single pole	
Group 4: No of Poles	2	Double pole	2 pole or 1+N
Group 4: No of Poles	3	Triple pole	
Group 4: No of Poles	4	Four pole	3+N
Group 5: Module Width	Code	Description	Comments
Group 5: Module Width	(13)	13 mm per pole	
Group 6: Mounting	Code	Description	Comments
Group 6: Mounting	D	DIN mount	DIN mount supplied in grey shell only - 45 mm front escutcheon
Group 6: Mounting	DM	Dual (DIN & mini rail) mount	Dual mount supplied in black shell only - 57 mm front escutcheon
Group 7: Time Delays	Code	Description	Instantaneous Trip Point (x In) Comments
Group 7: Time Delays	1	Long time delay, high instantaneous trip	10 – 20 Orange handle
Group 7: Time Delays	2	Medium time delay	5 – 10 White handle
Group 7: Time Delays	3	Short time delay	3 – 5 White handle
Group 7: Time Delays	9	Long time delay	7 – 12 White handle
Group 8: Current Ratings	Code / Description		Comments
Group 8: Current Ratings	1 - 25 A		
Group 9: Future use	Code	Description	Comments
Group 9: Future use	-	Not applicable	For future use
Group 10: Shunt Trip (approvals pending)	Code	Description	Comments
Group 10: Shunt Trip (approvals pending)	-	Shunt trip not fitted	
Group 11: Special Requirement	Code	Description	Comments
Group 11: Special Requirement	-	Not applicable	For future use
Group 12: Special Termination	Code	Description	Comments
Group 12: Special Termination	-	Not applicable	For future use
Group 13: Customer Specific	Code	Description	Comments
Group 13: Customer Specific	-	Not applicable	For future use

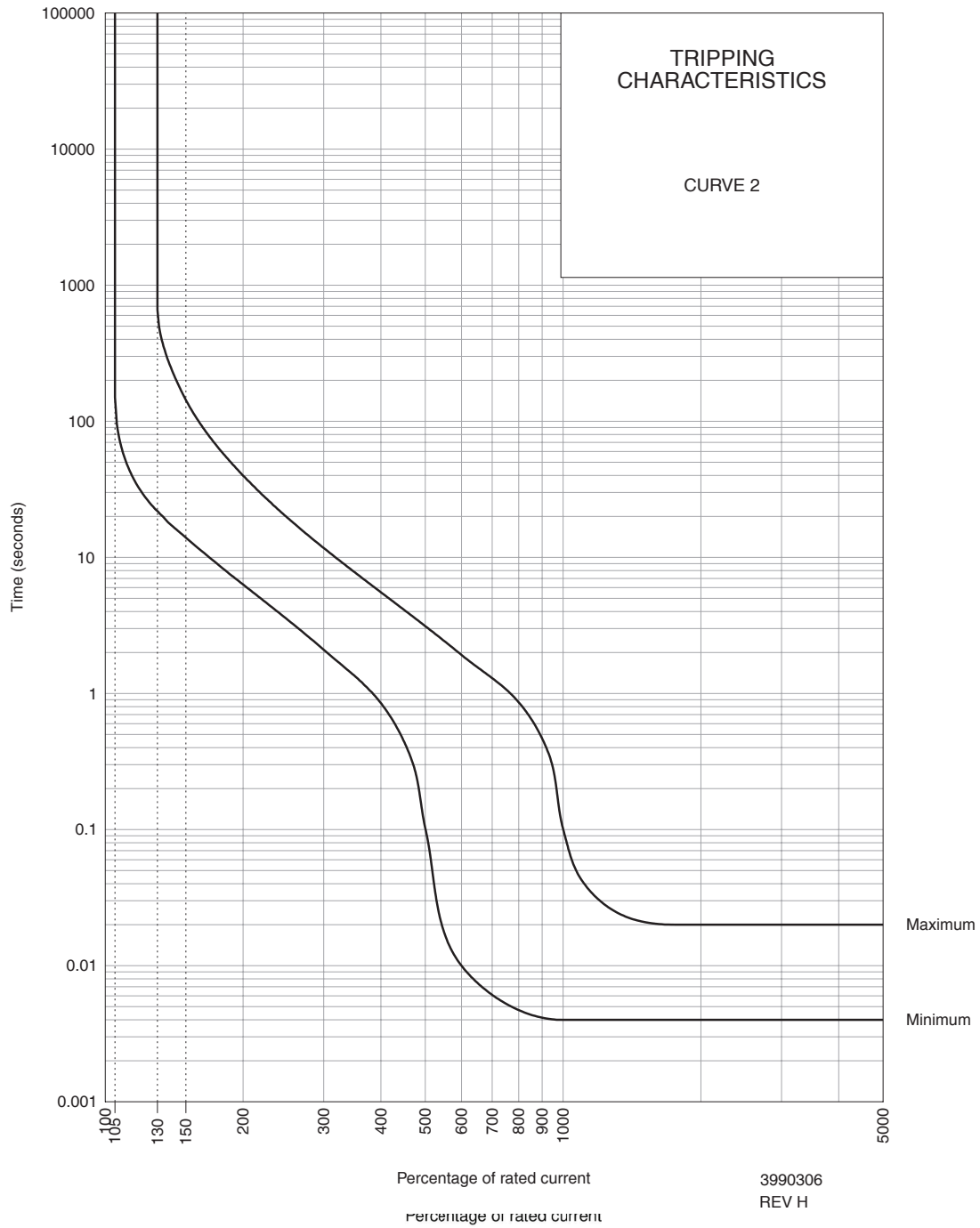
For options not listed, please contact CBI

TIME DELAY CURVES



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

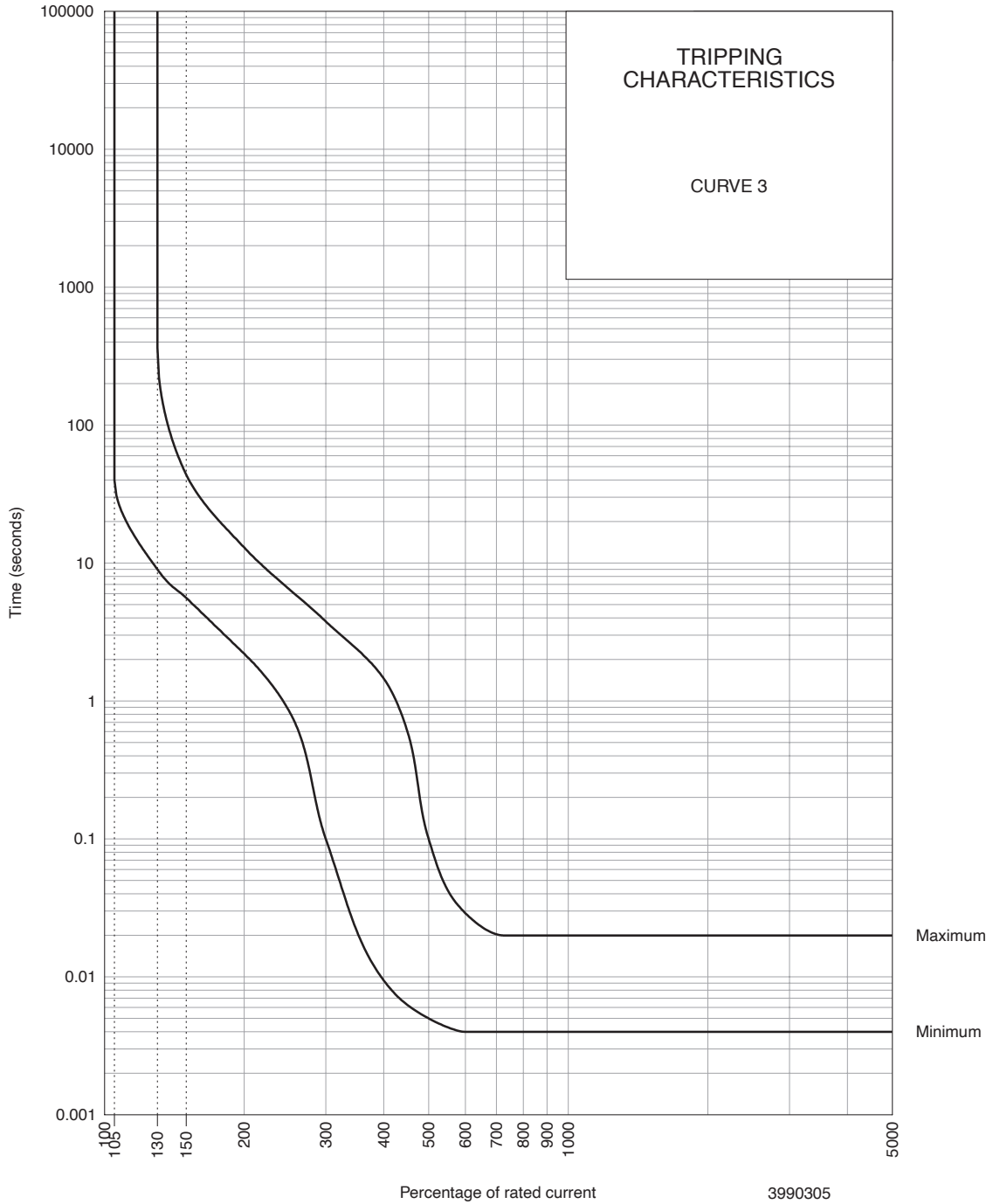
TIME DELAY CURVES



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

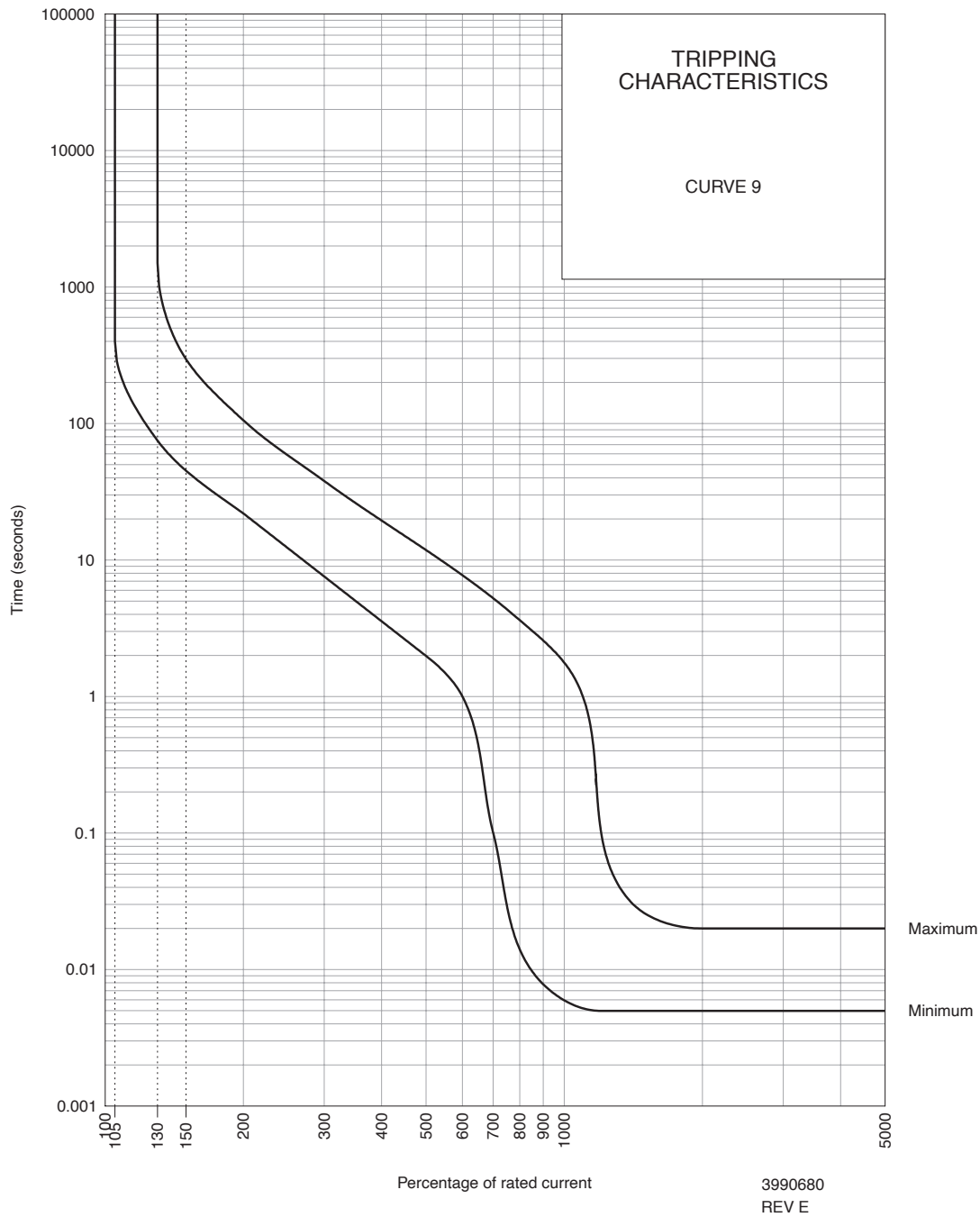
* The published time delay curves are generated at 30°C ambient temperature with the circuit breaker mounted in the up-right position. The "must hold", "must trip" and "instantaneous trip" current values are not affected by temperature, although delay time for the other operating current values may have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

TIME DELAY CURVES



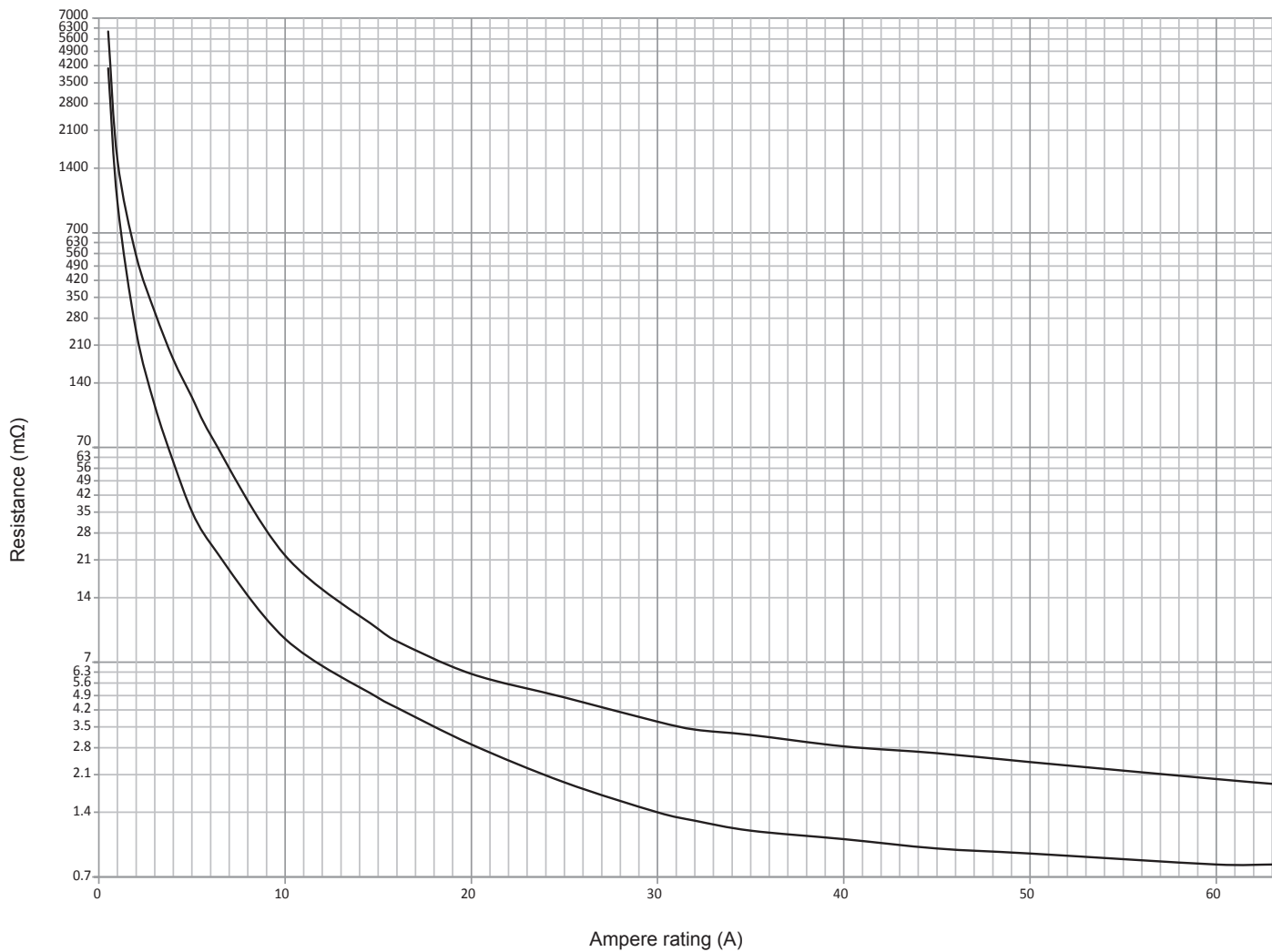
PERCENTAGE OF RATED CURRENT	105%	130%	145%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	2000%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	9	6	5.6	2.2	0.1	0.009	0.005	0.004	0.004	0.004	0.004	0.004	0.004
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	365	57	44	13	3.8	1.45	0.1	0.028	0.02	0.02	0.02	0.02	0.02

TIME DELAY CURVES



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

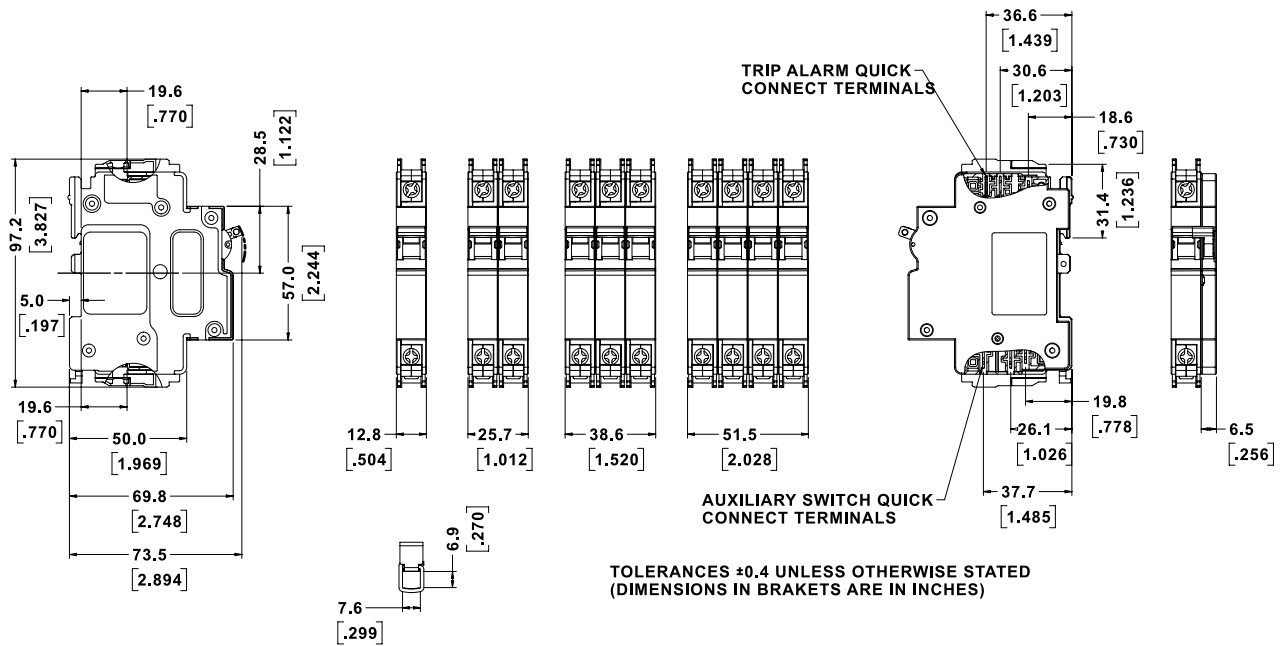
RESISTANCE CURVE



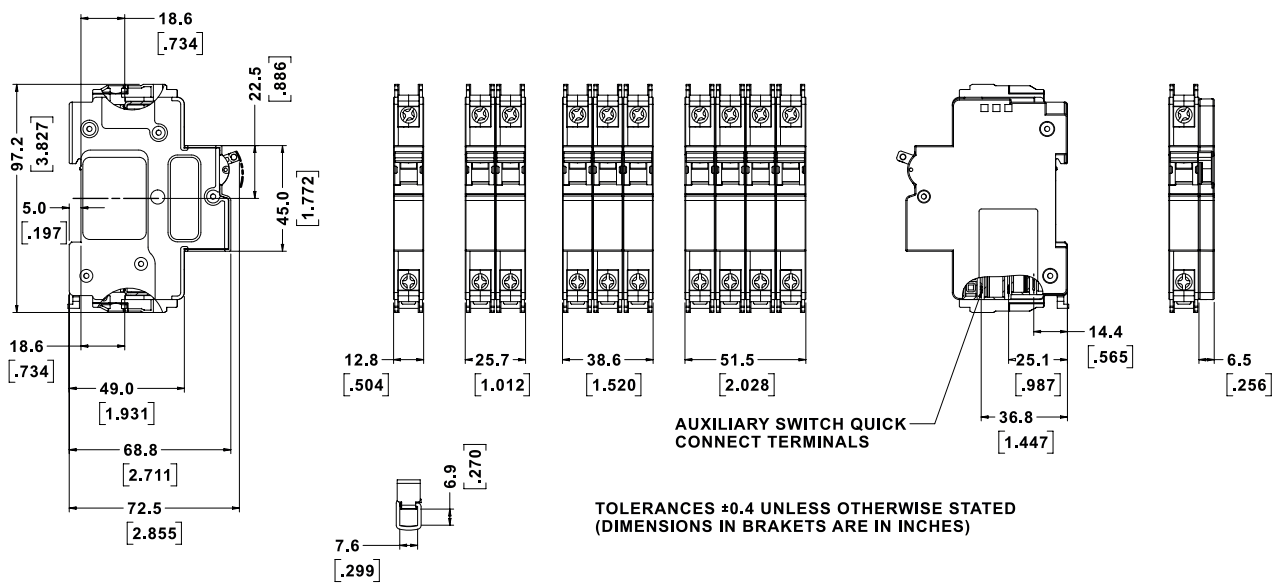
3990A784 REV A

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

OUTLINE DIMENSIONS: DUAL (DIN & MINI RAIL) MOUNT



OUTLINE DIMENSIONS: DIN MOUNT



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