CBI electric
low voltage
a Reunert company

Q-SERIES

QF(17)-FRAME EARTH LEAKAGE

QF17A
Dual (DIN & mini rail) mount

QF17C
Dual (DIN & mini rail) mount

PRODUCT INTRODUCTION

The QF17 type earth leakage device is available with or without overload protection as a circuit breaker and as a switch. The overload version has the suffix A and the version without overload has the suffix C.

FEATURES

- Hydraulic-magnetic technology
- 100% rating capability, independent of ambient temperature
- VDE, CQC and UL certified. VC 8035, CE, UKCA, CCC and AS/NZS 60947-2 compliant.
- Ratings 1 A to 40 A
- Earth leakage sensitivity 30 mA, Type A
- Single pole plus switched neutral earth leakage protection
- Switch versions fitted with short circuit protection
- Available in various currents ratings
- Precision tripping characteristics
- Compact 26 mm wide module
- Trip indication with mid-trip position
- Can be switched on immediately after tripping
- Suitable to use for electrical isolation
- Shell designed for easier installation onto busbar

APPLICATIONS

- Residential and commercial applications requiring high sensitivity earth leakage protection from electrical shock and fire hazards
- Earth leakage protection (DIN/EN 60947-2, Annexure B and Annexure L)
- Telecom/datacom equipment
- Lighting control
- UPS equipment
- Alternative energy equipment
- Mobile power generation equipment
- Railway signalling equipment
- Industrial equipment

AUXILIARY SWITCH, TRIP ALARM & COMBO: FEATURES

- Factory fitted
- Attached to right hand side of circuit breaker
- Compact 6.5 mm width
- Auxiliary switch
- Auxiliary switch + trip alarm
- Trip alarm
- AC and DC voltages
- UL 489 (Auxiliary switch: 6 A 240 Vac, 0.5 A 110 Vdc)
- IEC 60947-5-1 approved (Auxiliary switch: 6 A 240 Vac, 0.5 A 110 Vdc; trip alarm: 6 A 240 Vac, 0.5 A 110 Vdc)

OPTIONAL ACCESSORIES

- Rear studs (factory fitted)
- Handle lock - QFAP001
- Surface mounting clips - SAAX000
- Escutcheon blank - SFEB000
- Safety blank - SAEB000

APPROVALS

(DIN/EN 60947-2)

(UL 1053)

(GB/T 14048.2)

AS/NZS 60947-2

(IEC 60947-2)

TECHNICAL DATA

ELECTRICAL	
Dielectric Strength	1 480 V (Single pole) / 1 830 V (multi pole), 50 Hz for one minute after testing
Rated Impulse Withstand Voltage	4 kV (IEC 60947-2 Clause 8.3.3.2)
Time Delay Curves	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	10 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	Dual (DIN & mini rail) mount, surface mount
Number of poles	2 (1+N)
Weight	264 g - QF17C, 265 g - QF17A (unpacked)
Standard Colours	Shell - black (dual) Handle - green, or white and green

* Refer to the standard for details

Earth Leakage	Wire Size mm² (IEC)	Torque (IEC)	Comments
Main Terminals	0.75 - 25 mm²	2.5 N.m	Pozi #2 Combi head

Auxiliary Module	
Auxiliary Switch	DIN and CBi mini rail mounted
Trip Alarm	CBi mini rail mount only
Auxiliary Switch + Trip Alarm	CBi mini rail mount only

TECHNICAL DATA

Approvals	AS/NZS 60947-2, DIN/EN 60947-2, CE, UKCA, GB/T 14048.2	
Product Type	QF17A	QF17C
Number of Poles	2 (1+N)	2 (1+N)
Standard Ampere Ratings	5 to 40 A	40 A
Sensitivity	30 mA	30 mA
Rated Voltage	240 Vac	240 Vac
Rated S/C Withstand Capacity (Icw)	-	6 kA
Ultimate S/C Breaking Capacity (Icu)	6 kA	-

Approvals	UL 1053	
Product Type	QF17A	QF17C
Number of Poles	2 (1+N)	2 (1+N)
Standard Ampere Ratings	1 to 40 A	40 A
Sensitivity	22 mA	22 mA
Rated Voltage	240 Vac	240 Vac

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

LONG CODE

Example Code: Q-F-17-A---DM-2-40 A-30mA-240V----

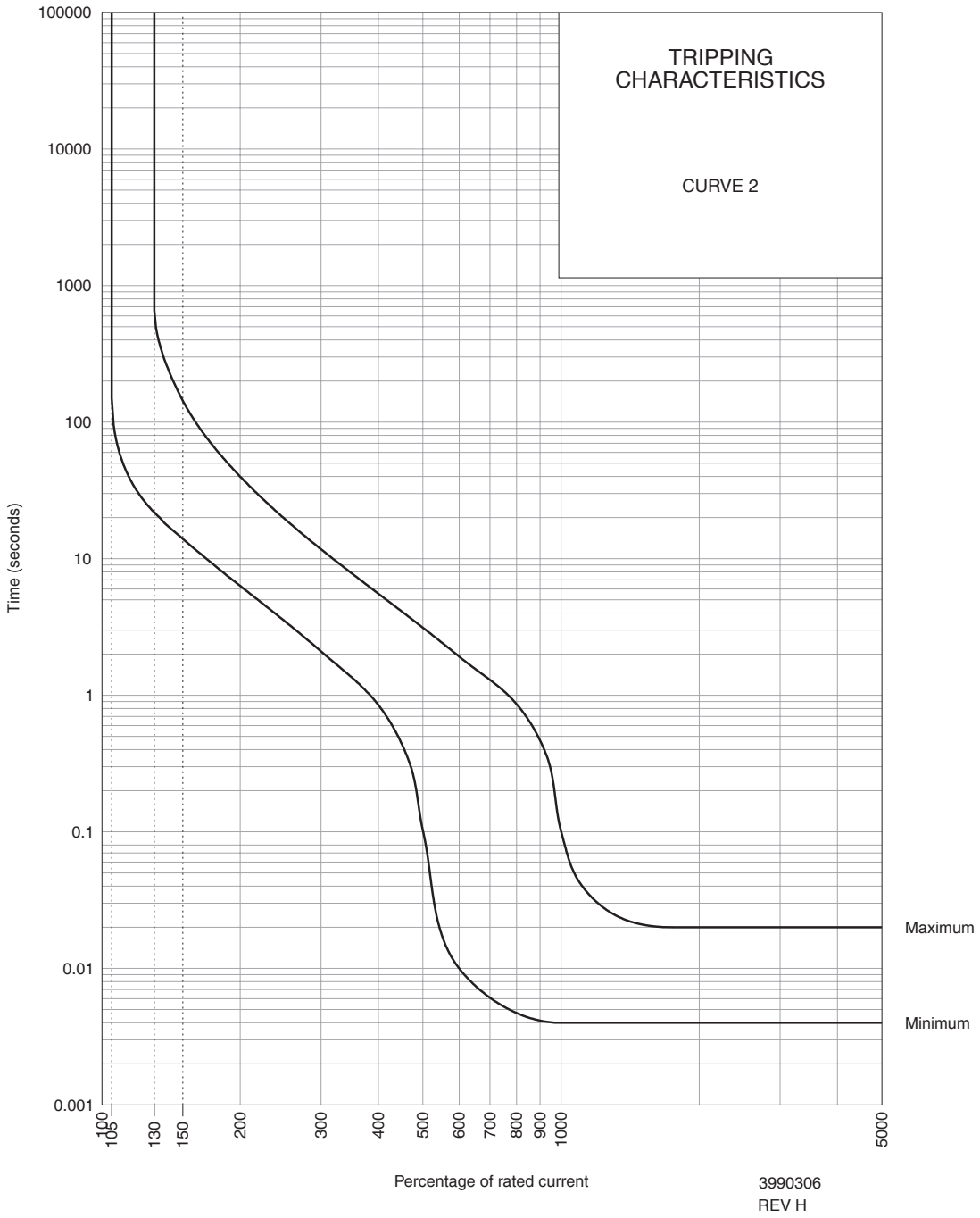
Group	1	2	3	4	5	6	7	8	9	10	11	12	13
Requirement	Q Frame	Type F	1 pole + N	Overload	No auxiliary switch	Dual mount	Medium delay curve 2	Current rating 40 A	Sensitivity 30 mA	Voltage 240 Vac	No special termination	Future use	Customer specific
Long Code	**Q**	**F**	**17**	**A**	**-**	**DM**	**2**	**40 A**	**30mA**	**240V**	**-**	**-**	**-**

ORDERING INFORMATION

Group 1: Frame Type	**Code**	**Description**	**Comments**	
	Q	26 mm wide earth leakage		
Group 2: Product Type	**Code**	**Description**	**Comments**	
	F	6 kA		
Group 3: No of Poles	**Code**	**Description**	**Comments**	
	17	Single phase Earth Leakage Unit (1+N)		
Group 4: E-L Type	**Code**	**Description**	**Comments**	
	A	Overload protection	White and green handle	
	C	Switch disconnector	Green handle	
Group 5: Auxiliary / Additional Pole	**Code**	**Description**	**Comments**	
	-	Not applicable	Use this code if no auxiliary used	
	A	Auxiliary switch (1 x auxiliary 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 (in 1 module)	6.5 mm module fitted on right-hand side	
Group 6: Mounting	**Code**	**Description**	**Comments**	
	DM	Dual (DIN & mini rail) mount	Dual mount supplied in black shell only - 57 mm escutcheon	
Group 7: Time Delays	**Code**	**Description**	**Instantaneous Trip Point (x In)**	**Comments**
	-	-	-	Time delays not applicable for the switch
	2	Medium time delay	5 – 10	
Group 8: Current Ratings	**Code / Description**		**Comments**	
	1, 5, 10, 15, 16, 20, 25, 30, 32, 40 A		QF17A	
	40 A		QF17C	
Group 9: Sensitivity	**Code**	**Description**	**Comments**	
	30mA	30 mA	Standard	
Group 10: Voltage	**Code**	**Description**	**Comments**	
	240 V	240 Vac		
Group 11: Special Termination	**Code**	**Description**	**Comments**	
	-	-	Box terminals (standard)	
	S	Rear connected stud	Factory fitted	
Group 12:	**Code**	**Description**	**Comments**	
	-	For future use (-)		
Group 13: Customer Specific	**Code**	**Description**	**Comments**	
	-	Not applicable	For future use	

For options not listed, please contact CBi

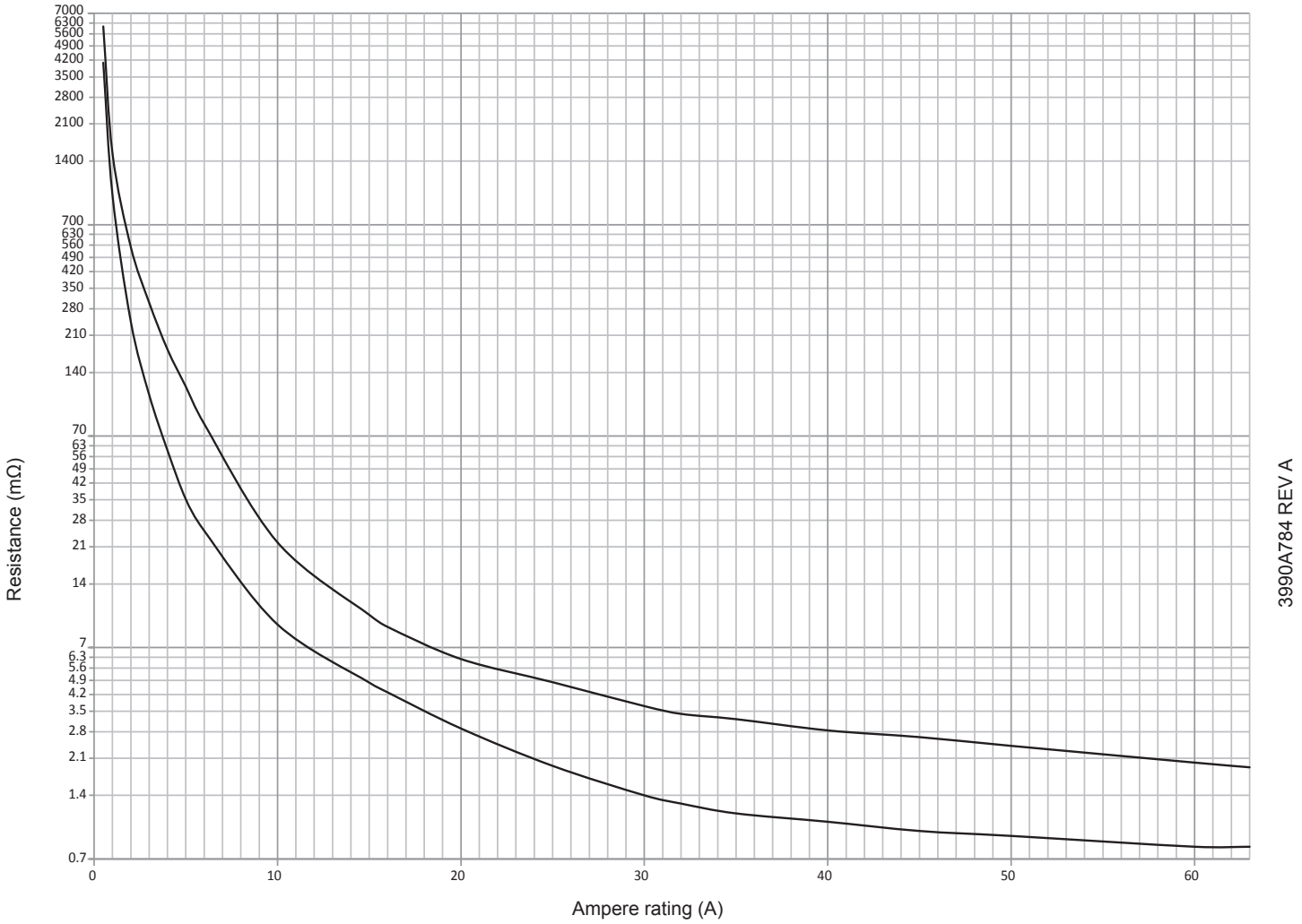
TIME DELAY CURVES



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	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

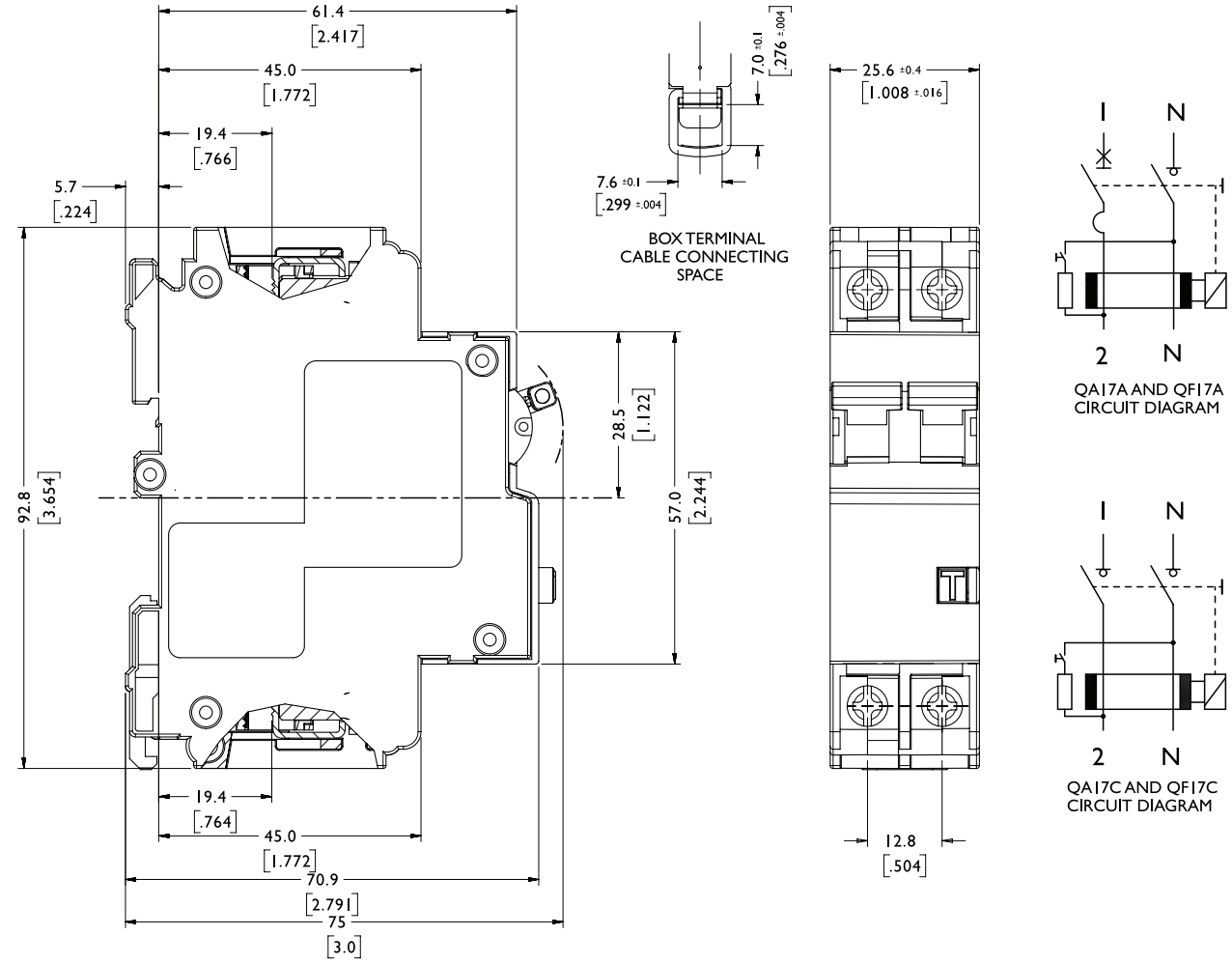
* The published time delay curves are generated at 30 °C ambient temperature with the circuit breaker mounted in the up-right position. The “must hold”, “must trip” and “instantaneous trip” current values are not affected by temperature, although delay time for the other operating current values may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

RESISTANCE CURVE



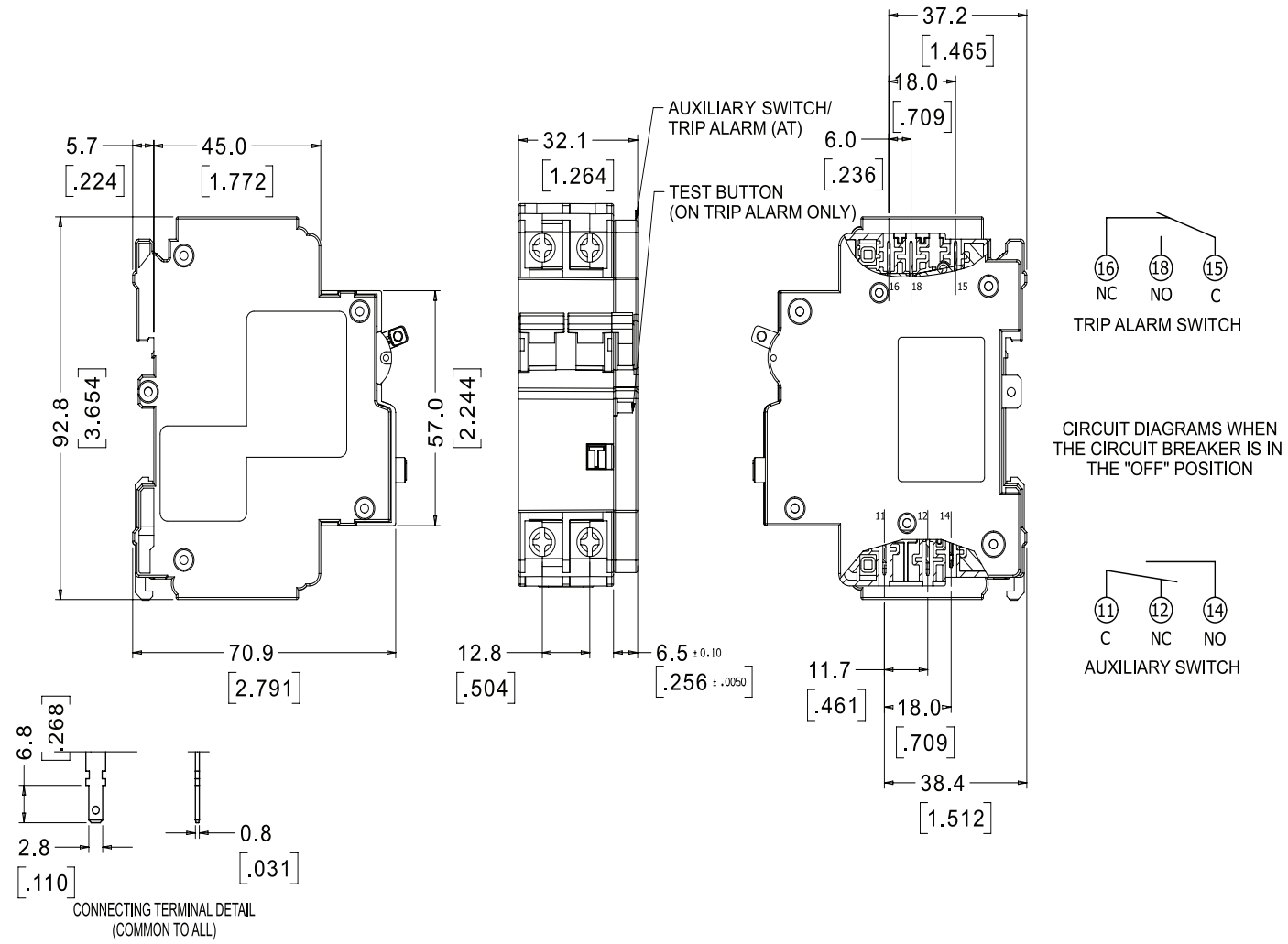
Amp RATING	0.5	1	2	5	6	10	15	20	25	30	32	40	50	60	63
MINIMUM (mΩ)	4085	970	244	35	25	9.0	4.8	2.9	1.9	1.4	1.3	1.1	0.9	0.8	0.8
MAXIMUM (mΩ)	6065	1527	550	120	80	22	10	6.2	4.8	3.7	3.4	2.8	2.4	2.0	1.9

OUTLINE DIMENSIONS: DUAL (DIN & MINI RAIL) MOUNT



TOLERANCE ±0.4 UNLESS OTHERWISE SPECIFIED
(DIMENSION IN BRACKETS ARE IN INCH)

OUTLINE DIMENSIONS: DUAL MOUNT AND AUXILIARY SWITCH



TOLERANCE ±0.4 UNLESS OTHERWISE SPECIFIED
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