a Reinert company

Y-SERIES

YF-FRAME MINIATURE CIRCUIT BREAKERS

1 Pole DIN mount | 1 Pole DIN mount | 2 Pole DIN mount | 4 Pole DIN mount

FEATURES

- AC and DC circuit breaker
- Ultra compact - 13 mm wide module
- Hydraulic-magnetic technology
- Can be switched on immediately after tripping
- YFD - DIN mount, **45 mm** front escutcheon **(grey)**
- YFM - DIN mount, **57 mm** front escutcheon **(black)**
- YFK - Dual (DIN & Mini) mount, **57 mm** front escutcheon **(black)**
- ON and OFF indication
- Suitable for electrical isolation
- 100% rated current capability, independent of ambient temperature
- One, two, three, four pole, 1P+N and 3P+N
- RoHS compliant
- Box type main terminals

APPLICATIONS

- AC and DC branch circuit protection
- Telecom/datacom equipment
- Lighting control
- UPS equipment
- Alternative energy equipment
- Mobile power generation equipment
- Railway signalling equipment
- Residential equipment
- Industrial equipment

AUXILIARY SWITCH AND TRIP ALARM FEATURES

- Auxiliary switch
- AC and DC voltages
- IEC 60947-5-1 (6 A 240 Vac, 0.5 A 110 Vdc)
- GB 14048.5 approved
- Factory fitted
- Attached to right hand side of circuit breaker
- Compact 6.5 mm width

APPROVALS

c UL us LISTED (UL 489; CSA C22.2 NO.5)

(GB 14048.2)

CE UKCA (IEC 60947-2)

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	I, S, M, L

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	20 G (IEC 60068-2-27)
Vibration	3 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Flammability	I3 - Ignition does not persist at 850°C after glow wire is withdrawn with an oxygen index of ≥ 28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 and dual (DIN & mini rail) mounting
Number of poles	1, 2, 3 and 4 (3P+N) Pole
Weight	110 g per pole
Standard Colours	Shell – black, grey Handle – white

* Refer to the standard for details

Breaker YF	Wire Size (IEC)	Wire Gauge (UL)	Torque (IEC)	Torque (UL)	Comments
Main Terminals	2.5 mm² to 16 mm²	18 – 6 AWG	3.5 N.m	30 lbf.in	Pz #2 Combi head

Note:
All information subject to testing and certification. For the latest information contact CBI.

Approvals	IEC 60947-2, GB 14048.2, CE, UKCA				
Product Type	Circuit Breaker YF				
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	32 A				
Ultimate S/C Breaking Capacity (Icu)	6 kA				

Approvals	UL 489			
Product Type	Circuit Breaker YF			
Number of Poles	1	2	2	3
Operating Voltages	240 Vac, 80 Vdc	240 Vac	120/240 Vac, 80 Vdc	240 Vac, 80 Vdc
Minimum Current Rating	0.5 A	0.5 A	0.5 A	0.5 A
Maximum Current Rating	32 A	25 A	32 A	32 A
Ampere Interrrupting Capacity (AIC)	10 kA			

* YF Frame is also certified to operate at 80 Vdc
Verify approvals for specific ratings in accordance with the relevant test certificates.

LONG CODE

Example Code: YFD- - -1 -(13)-M-32A- - - - - -

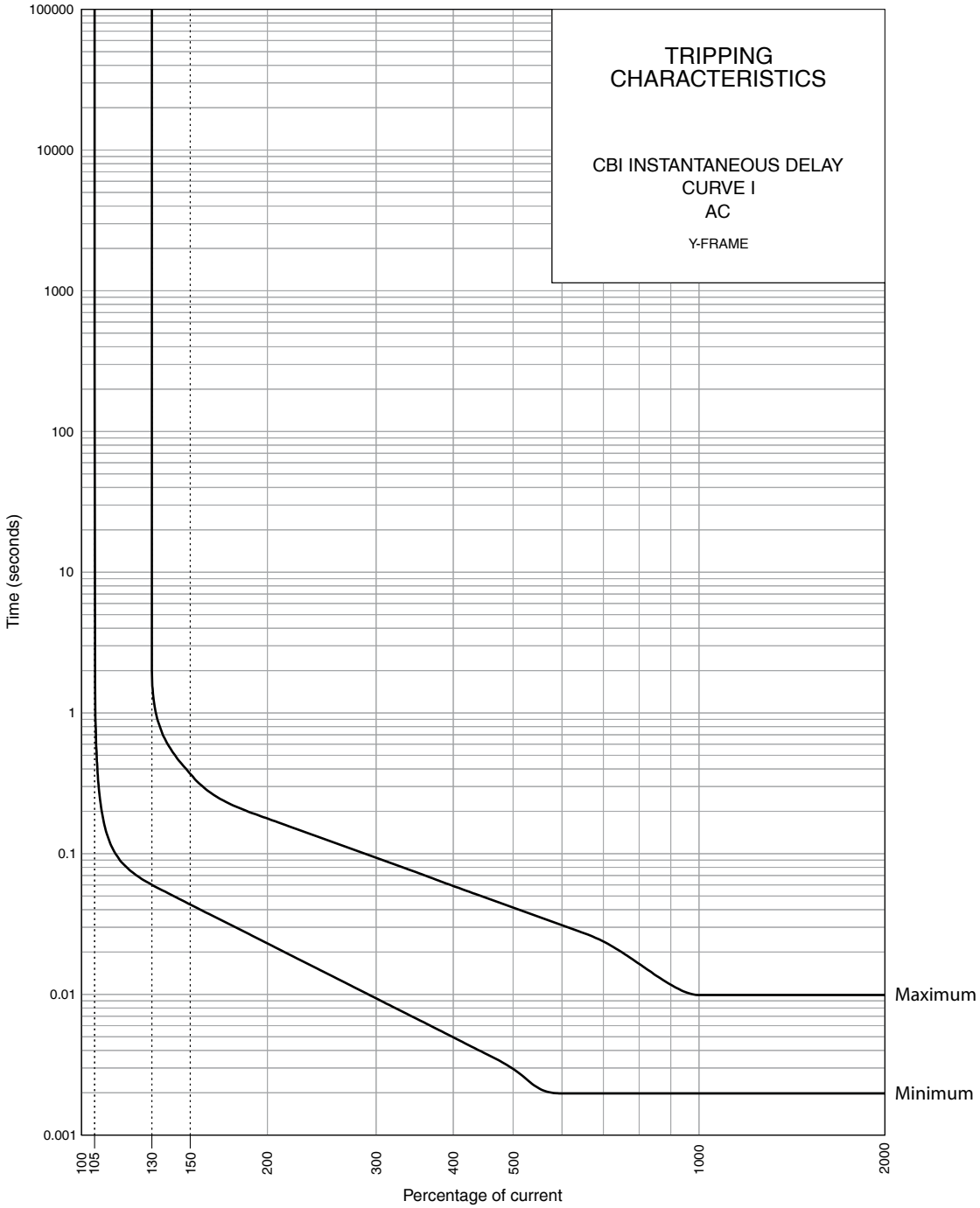
Group	1	2	3	4	5	6	7	8	9	10
Requirement	YFD frame	Auxiliary	Number of poles	Module width	Time delay curve	Current rating	N/A	Shunt trip	Termination	Customer Specific
Long Code	**YFD**	**-**	**1**	**(13)**	**M**	**32A**	**-**	**-**	**-**	**-**

ORDERING INFORMATION

Group 1: Frame Type	**Code**	**Description**	**Comments**
	YFD	YF - Frame (13 mm circuit breaker DIN mounting 45 mm front escutcheon grey)	Grey shell
	YFK	YF - Frame (13 mm circuit breaker Dual (DIN & Mini rail) mount 57 mm front escutcheon black)	Black shell
	YFM	YF - Frame (13 mm circuit breaker DIN mounting 57 mm front escutcheon black)	Black shell
Group 2: Auxiliary	**Code**	**Description**	**Comments**
	-	Not applicable	Use this if no Aux switch is required
	A	Auxiliary switch	(IEC 60947-2 only)
	T	Trip alarm	(IEC 60947-2 only)
	AT	Auxiliary switch & trip alarm	(IEC 60947-2 only)
Group 3: Number of poles	**Code**	**Description**	**Comments**
	1	One pole	
	2	Two pole	2P, 1P+N
	3	Three pole	
	4	Four pole	3P+N
Group 4: Module Width	**Code**	**Description**	**Comments**
	(13)	13 mm module	
Group 5: Time Delay	**Code**	**Description**	**Comments**
	I	Instantaneous time delay	
	S	Short time delay	
	M	Medium time delay	
	L	Long time delay	
Group 6: Current Rating	**Code**	**Description**	**Comments**
	0.5, 1, 2, 3, 5, 6, 10, 15, 16, 20, 25, 30, 32 A		
Group 7: Voltage Rating	**Code**	**Description**	**Comments**
	ACS	240 Vac, 80 Vdc	(DC UL 489 approval only)
	ACM	120/240 Vac, 240 Vac, 415 Vac, 80 Vdc	(DC UL 489 approval only)
Group 8: Neutral / Shunt trip	**Code**	**Description**	**Comments**
	-	Not applicable	If shunt trip not required
	C	12 Vdc shunt trip (box terminals)	Recommended pulse tolerance 100 ms - 60 s
	D	24 Vdc shunt trip (box terminals)	
	E	48 Vdc shunt trip (box terminals)	
	G	110 Vdc or 110 Vac (box terminals)	
	H	220 - 240 Vac shunt trip (box terminals)	
	K	Neutral + 110 Vdc or 110 Vdc shunt trip (flying leads)	
	L	Neutral + 48 Vdc shunt trip (flying leads)	
	M	Neutral + 24 Vdc shunt trip (flying leads)	
	N	Neutral	
	V	Neutral + 12 Vdc shunt trip (flying leads)	
	W	Neutral + 220 - 240 Vac shunt trip (flying leads)	
Group 9: Termination	**Code**	**Description**	**Comments**
	-	Standard box terminal	
Group 10: Customer Specific	**Code**	**Description**	**Comments**
	-	Not applicable	

For options not listed, please contact CBi

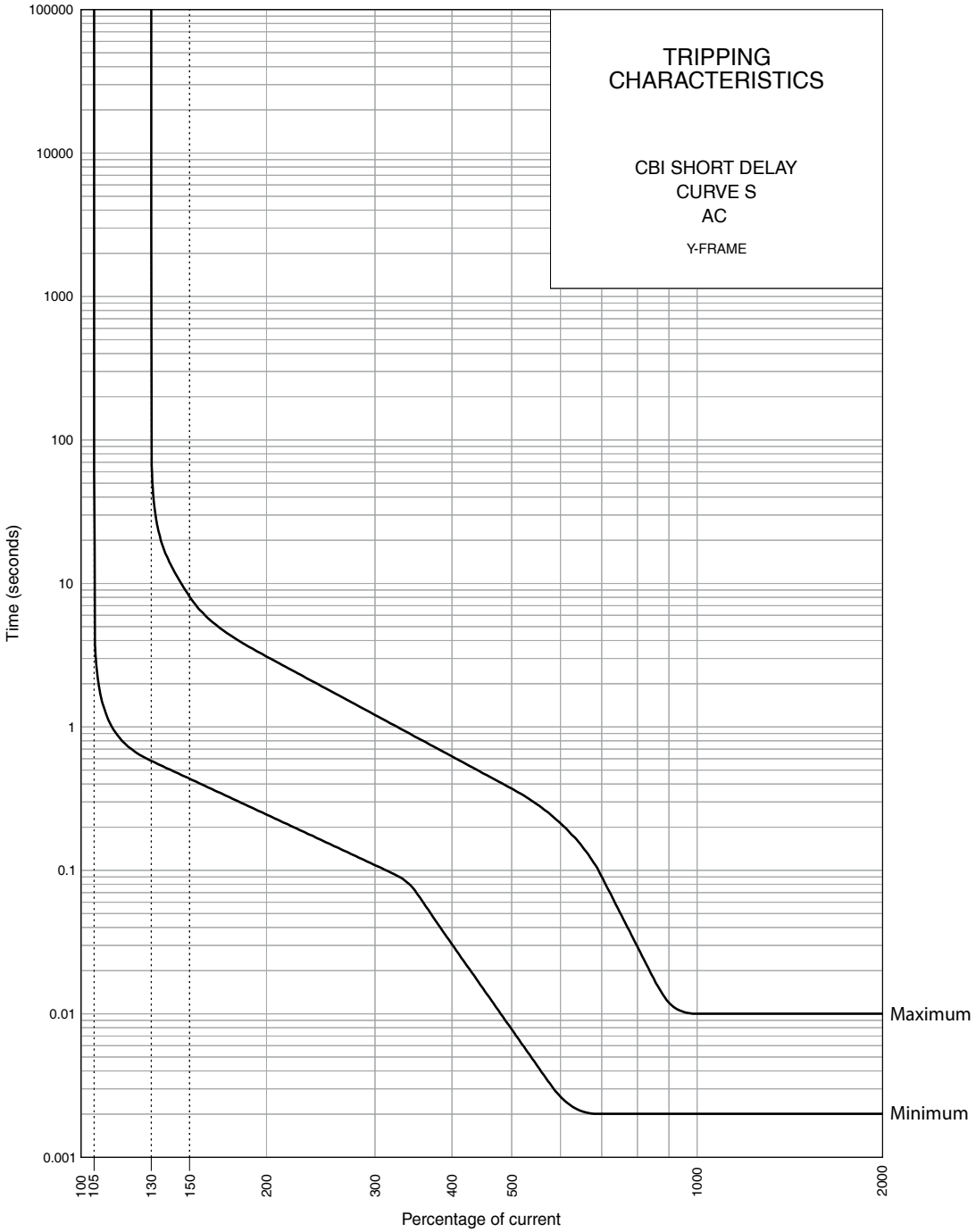
TIME DELAY CURVE



PERCENTAGE OF RATED CURRRENT	105%	130%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	1200%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	0.06	0.04	0.02	0.009	0.005	0.003	0.002	0.002	0.002	0.002	0.002	0.002
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	2	0.4	0.2	0.09	0.1	0.04	0.03	0.02	0.016	0.012	0.01	0.01

Note:
All information subject to testing and certification. For the latest information contact CBi.

TIME DELAY CURVE



PERCENTAGE OF RATED CURRRENT	105%	130%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	1200%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	0.58	0.44	0.2	0.1	0.03	0.01	0.003	0.002	0.002	0.002	0.002	0.002
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	3000	8.1	3.1	1.21	0.6	0.4	0.2	0.1	0.03	0.012	0.01	0.01

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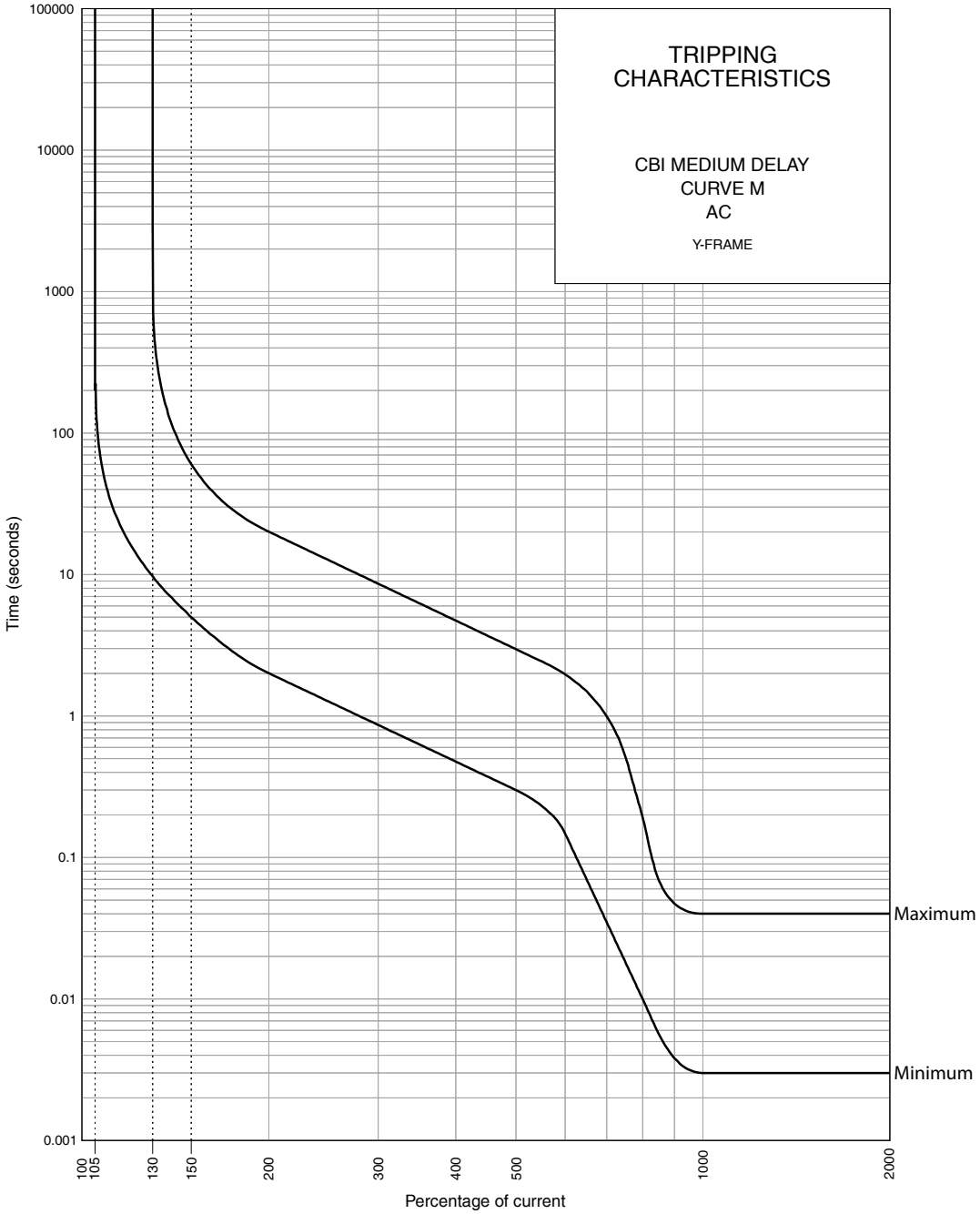
TIME DELAY CURVE



PERCENTAGE OF RATED CURRRENT	105%	130%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	1200%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	9.7	4.99	2.0	0.9	0.48	0.3	0.15	0.03	0.01	0.004	0.003	0.003
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	3000	60.0	20.0	8.62	4.7	3.0	1.97	0.99	0.19	0.05	0.04	0.04

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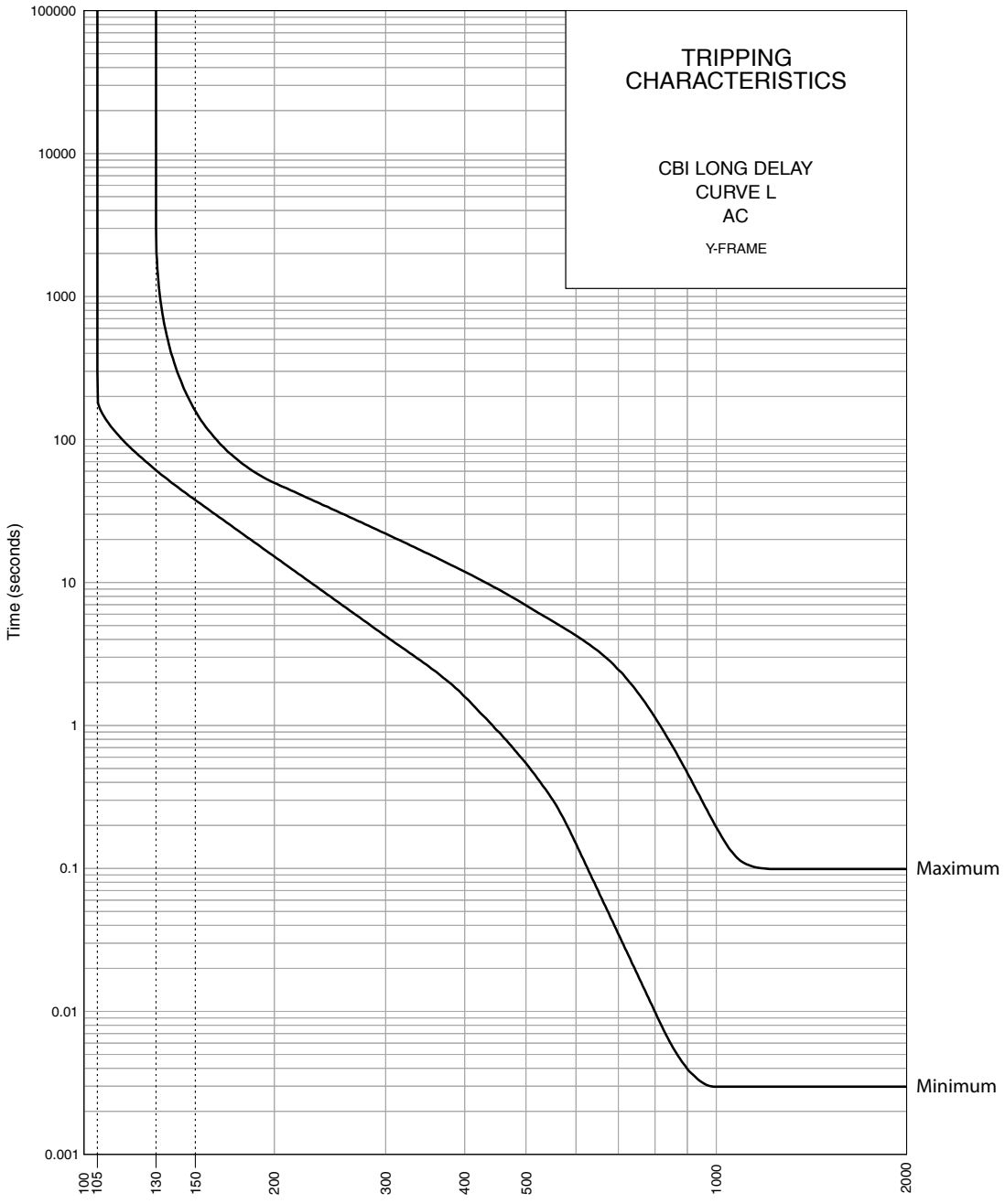
TIME DELAY CURVE



PERCENTAGE OF RATED CURRRENT	105%	130%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	1200%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	60.9	37.7	15.2	4.2	1.6	0.54	0.15	0.03	0.01	0.004	0.003	0.003
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	3000	158.3	49.8	21.98	11.9	6.9	4.3	2.5	1.1	0.5	0.2	0.1

Note:
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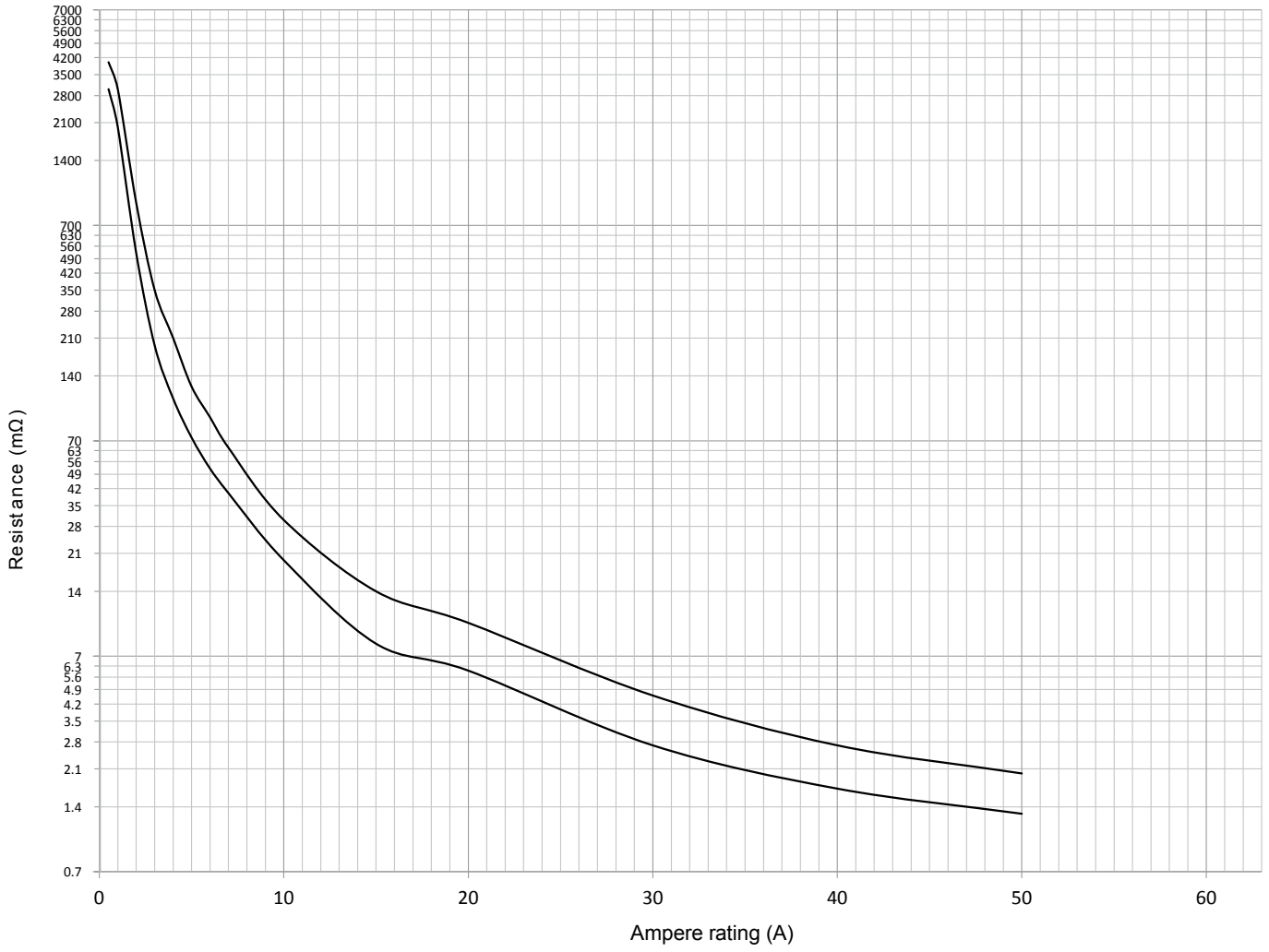
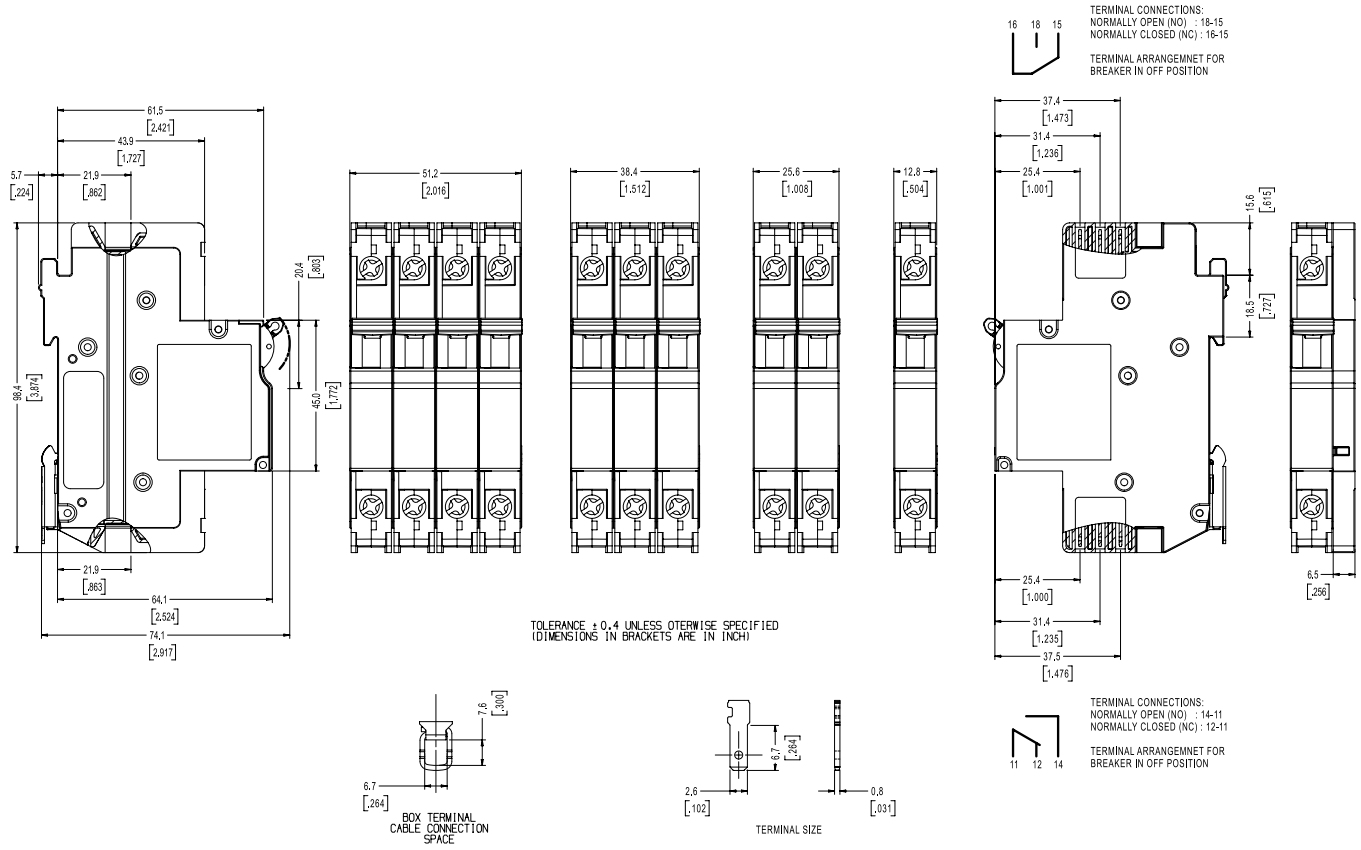
RESISTANCE CURVE



Amp RATING	0.5	1	2	3	4	5	6	7	10	15	20	30	40	50
MINIMUM (mΩ)	3000	2000	520	190	110	72	52	40	19.5	8	6	2.7	1.7	1.3
MAXIMUM (mΩ)	4000	3000	890	350	220	100	95	80	30	14	10	4.6	2.7	2.0

OUTLINE DIMENSIONS: DIN MOUNT 45 MM (YFD) FRONT ESCUTCHEON (GREY)



Note:
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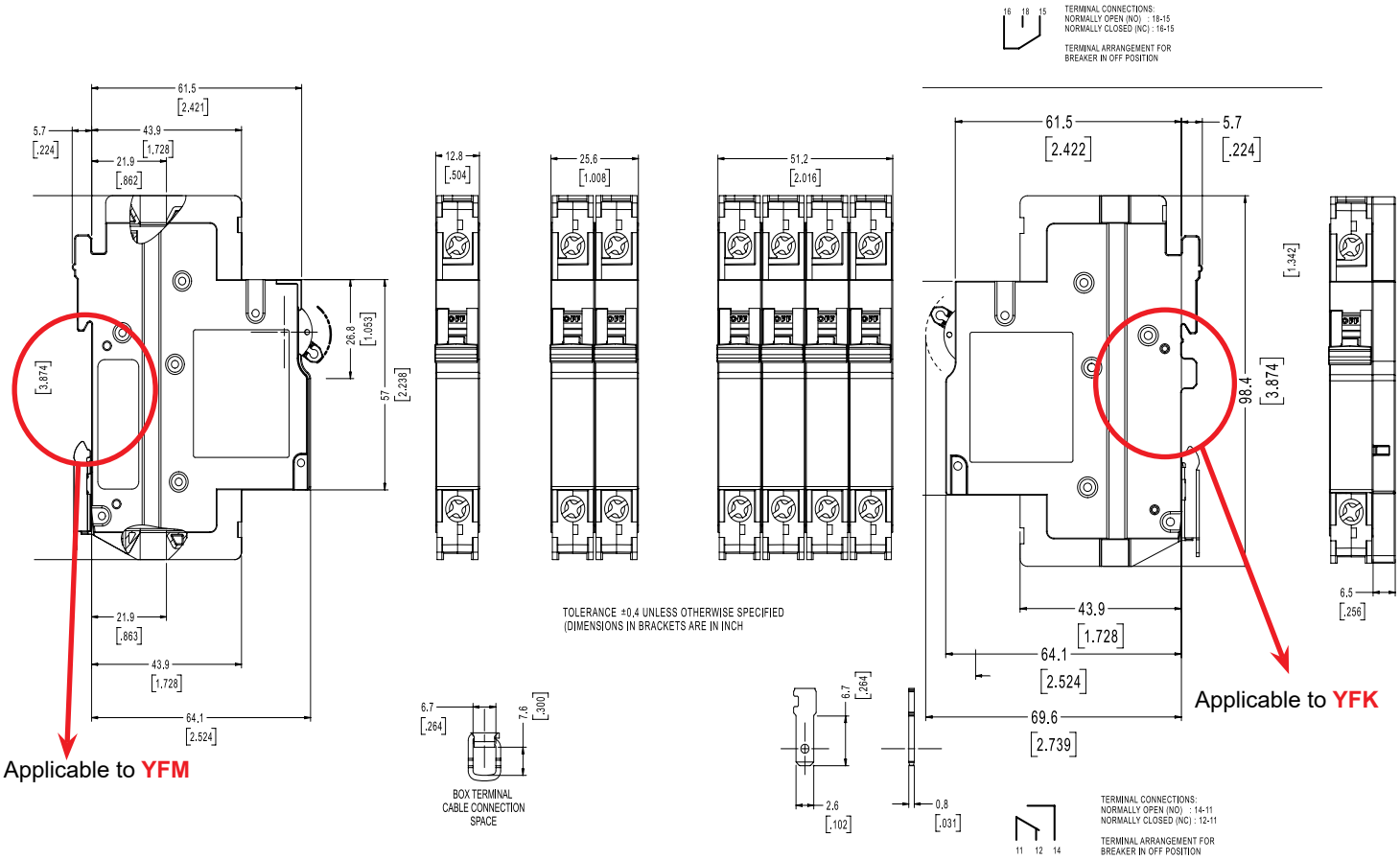
OUTLINE DIMENSIONS: DUAL MOUNT (DIN AND MINI RAIL) 57 MM (YFK) FRONT ESCUTCHEON (BLACK)

DIN MOUNT 57 MM (YFM) FRONT ESCUTCHEON (BLACK)



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