

TemBreak

Circuit Breaker with Integral Residual Current Protection (CBR)

Safety and protection are the prime purposes of Terasaki products. You care about safety and protection. The users of products you specify care about safety and protection.

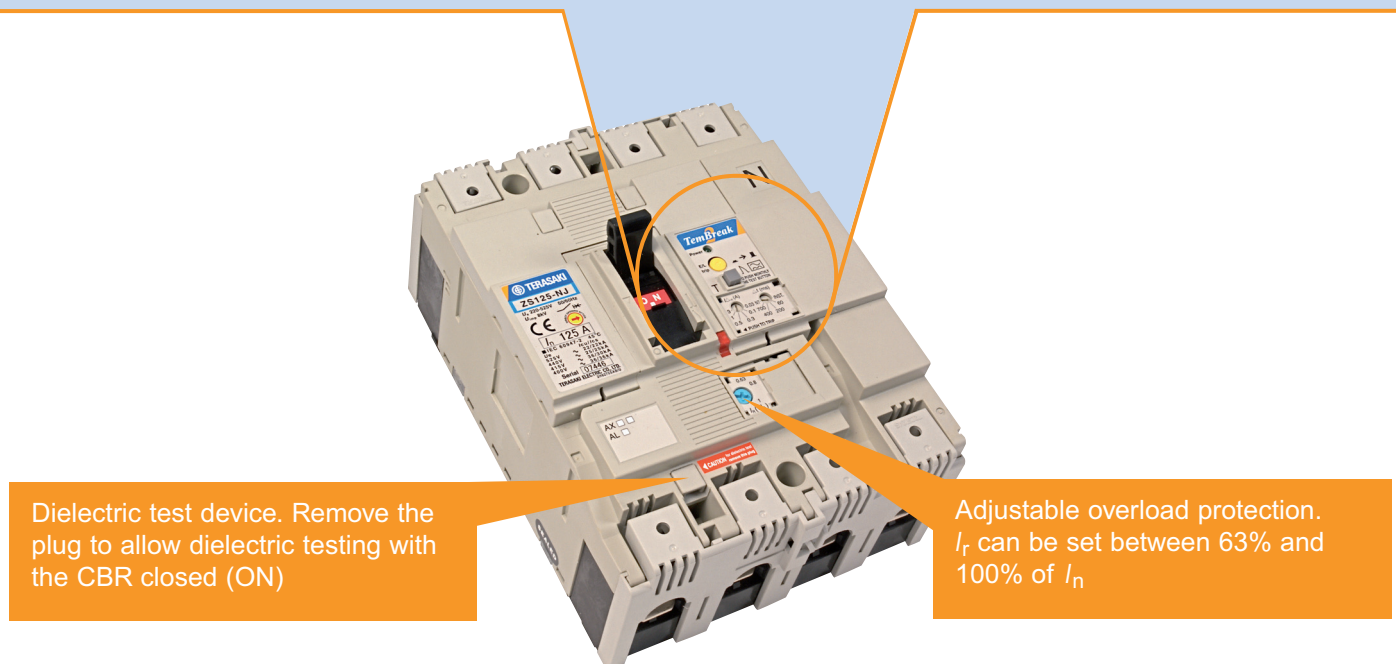
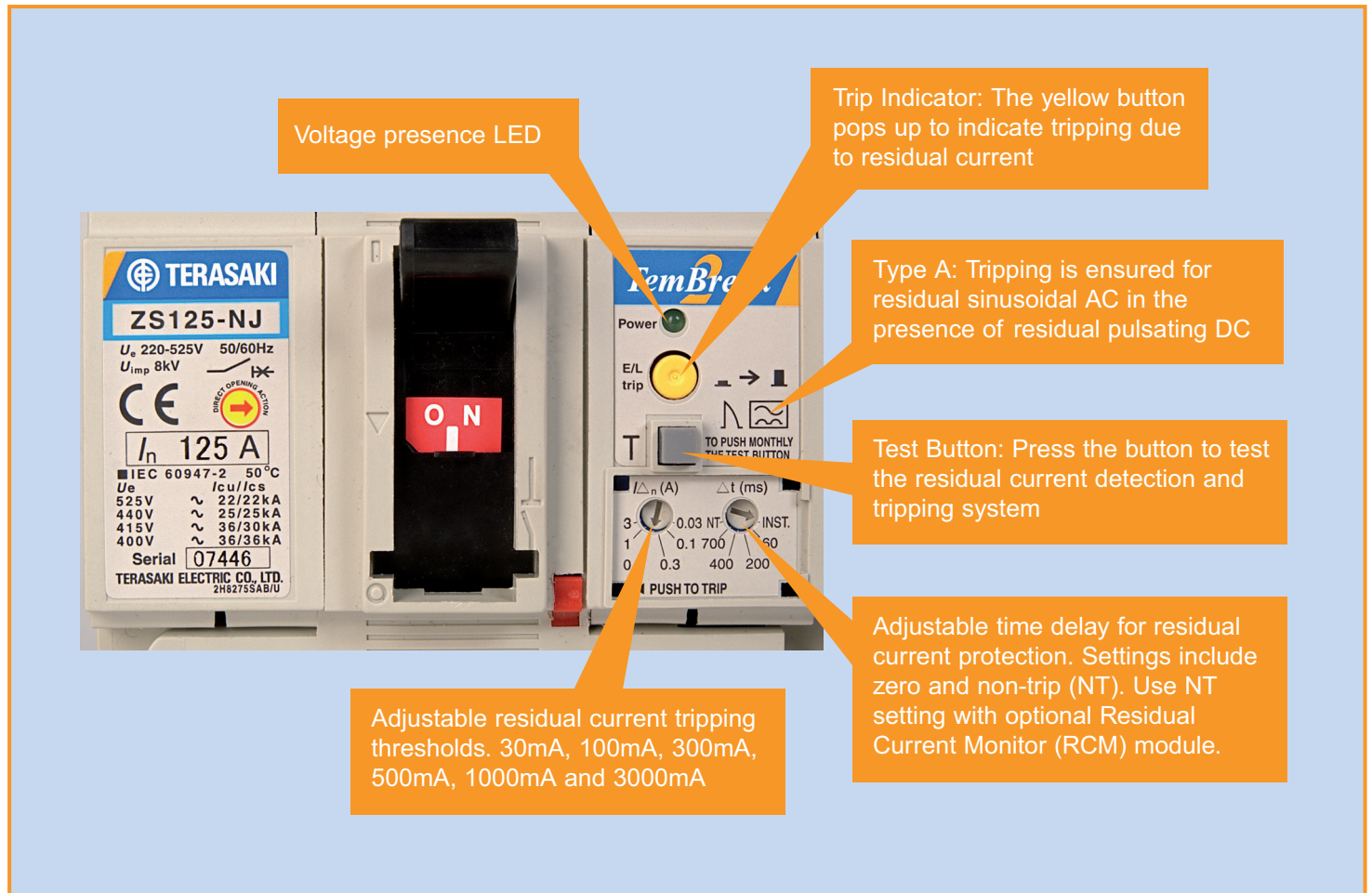
The new **TemBreak2** CBR (Circuit Breaker with Integral Residual current protection) provides protection from electric shock, overloads and short-circuits. Three types of protection are combined in a standard MCCB frame size. Read on to discover how to increase safety while saving space.

THE NEW TEMBREAK 2 CBR

HOW DOES THE TEMBREAK2 CBR SAVE SPACE?

1. The **TemBreak2** CBR has the same dimensions and fixings as the **TemBreak2** MCCB.
2. The **TemBreak2** CBR eliminates the need for either an external relay with current transformers or add-on block.

FEATURES



RATINGS AND SPECIFICATIONS

CBR ELECTRICAL CHARACTERISTICS TO IEC 60947-1, IEC 60947-2, IEC 60947-2 ANNEX B, IEC 60755

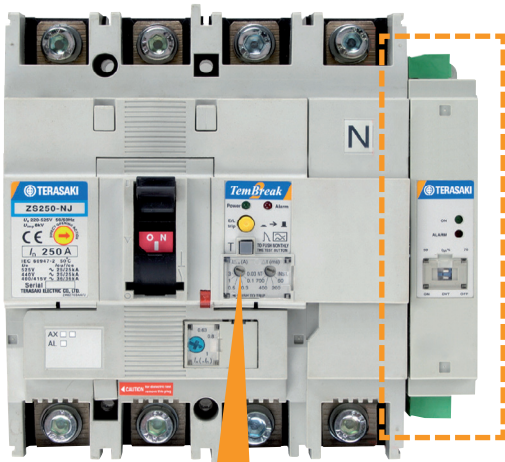
Frame	Quantity	Unit	Condition	125			250		
Model				ZE125	ZS125	ZS125	ZE250	ZS250	ZS250
Type				NJ	NJ	GJ	NJ	NJ	GJ
Number of Poles				3, 4	3, 4	3, 4	3, 4	3, 4	3, 4
Nominal current ratings									
	I_n	(A)	50°C	20,32, 50,63, 100,125	20,32, 50,63, 100,125	20,32, 50,63, 100,125	160, 250	160, 250	160, 250
Electrical characteristics									
Rated operational voltage	U_e	(V)	AC 50/60 Hz	525	525	525	525	525	525
Rated impulse withstand voltage	U_{imp}	(kV)		8	8	8	8	8	8
Ultimate breaking capacity (IEC, JIS, AS/NZ)	I_{cu}	(kA)	525V AC	8	22	25	10	20	25
			440V AC	15	25	50	15	25	50
			400/415V AC	25	36	65	25	36	65
			220/240V AC	35	50	85	35	65	85
Service breaking capacity (IEC, JIS, AS/NZ)	I_{cs}	(kA)	525V AC	6	22	22	7.5	20	25
			440V AC	12	25	25	12	25	25
			400/415V AC	19	36/30	36/33	19	36	36
			220/240V AC	27	50	85	27	65	85
Protection									
TMD Adjustable thermal, fixed magnetic Residual current protection, Type A Utilisation category				A	A	A	A	A	A
Installation									
Front connection (FC)				•	•	•	•	•	•
Attached flat bar (FB)				•	•	•	•	•	•
Solderless terminal (cable clamp) (FW)				•	•	•	•	•	•
Rear connection (RC)				-	-	-	-	-	-
Plug-in (PM)				•	•	•	•	•	•
DIN rail mounting (DA)				•	•	•	•	•	•
Dimensions	height	(mm)		155	155	155	165	165	165
		(mm)	3 pole	90	90	90	105	105	105
	width	(mm)	4 pole	120	120	120	140	140	140
		(mm)		68	68	68	68	68	68
Weight	weight	(kg)	3 pole	1.1	1.1	1.1	1.5	1.5	1.5
			4 pole	1.4	1.4	1.4	1.9	1.9	1.9
Operation									
Direct Opening Action				•	•	•	•	•	•
Toggle operation				-	-	-	-	-	-
Variable depth/direct mount operating handle (HB/HP)				•	•	•	•	•	•
Mechanical Interlocks				-	-	-	-	-	-
Motor Operator (MC)				•	•	•	•	•	•
Insulation Accessories									
Terminal covers and interpole barriers				•	•	•	•	•	•
Switchboard Accessories									
Door Flange				-	-	-	-	-	-
Toggle Lock				•	•	•	•	•	•
Endurance									
	Electrical	cycles	415V AC		30,000		30,000		30,000
	Mechanical	cycles			30,000		30,000		30,000

* Supply voltage connected to bottom terminals

■ Standard • Optional - Not Available

TEMBREAK 2 CBR

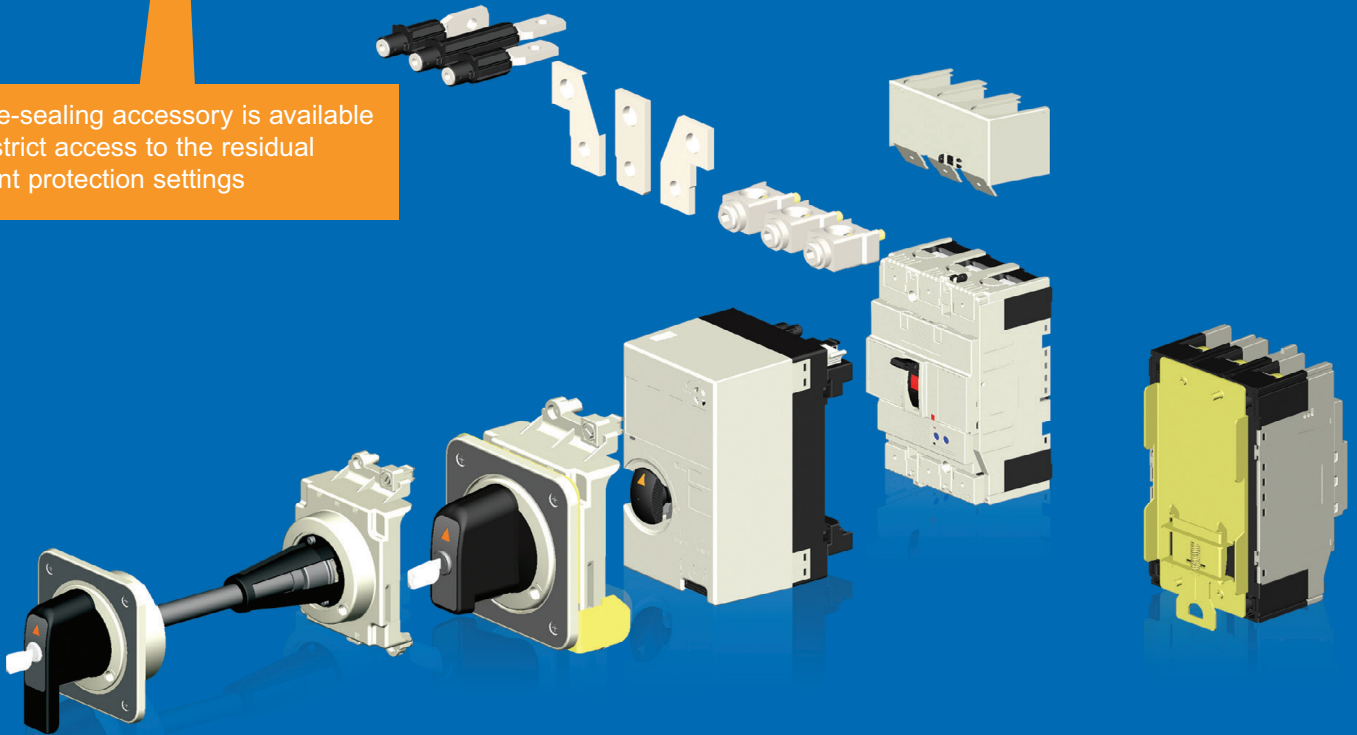
ACCESSORIES



RESIDUAL CURRENT MONITOR AND REMOTE TRIP MODULE.

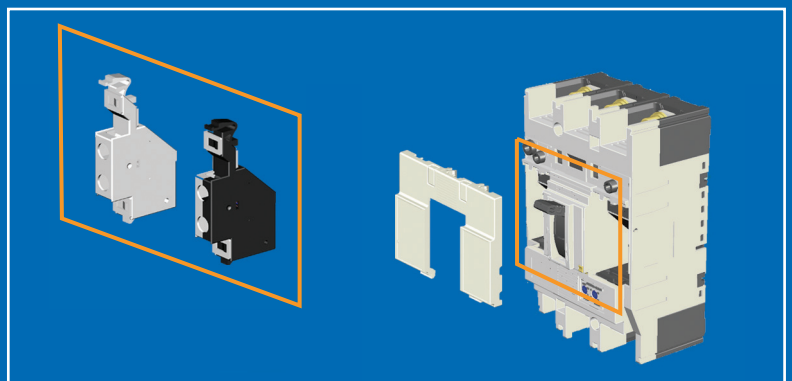
- *Normally open alarm contact (2A, 250V AC) closes on detection of residual current. Alarm threshold is adjustable
- *Green LED indicates voltage is present
- *Red LED provides visual indication of residual current
- *Can be configured to provide trip + alarm or alarm only
- *Remote trip terminals allow tripping by pushbutton
- *Can be configured to provide voltage drop protection

A wire-sealing accessory is available to restrict access to the residual current protection settings



The external accessories listed below are available for **TemBreak2** CBRs. They are common to **TemBreak2** MCCBs. For details and dimensions, refer to "**TemBreak2**, The Ultimate Safety Breaker, 16-161EU".

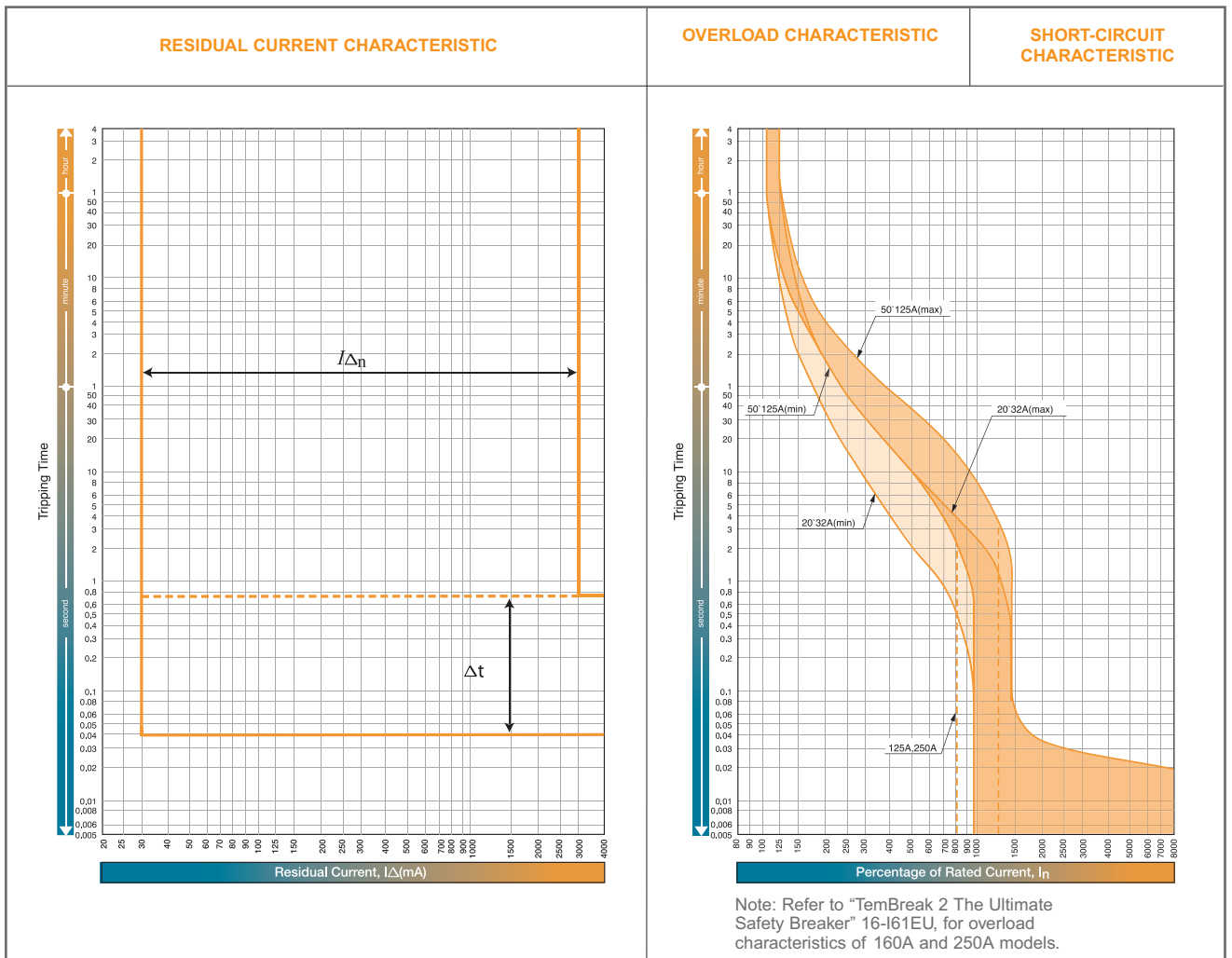
Terminal bars; cable clamps; rear connections; DIN rail mounting (ZE125 and ZS125 only); door-mounted handle; breaker-mounted handle; motor operator terminal covers for front connection; terminal covers for cable clamps; toggle lock.



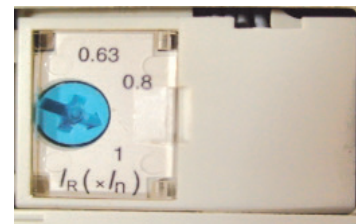
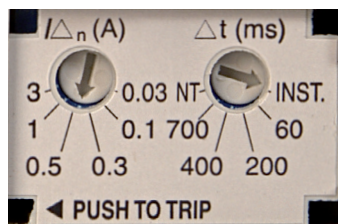
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Auxiliary switch and alarm switch.

OPERATING CHARACTERISTICS



Note: Refer to "TemBreak 2 The Ultimate Safety Breaker" 16-I61EU, for overload characteristics of 160A and 250A models.



$I_{\Delta n}$ is the adjustable tripping threshold for residual current (earth leakage) protection. It can be set between 30mA and 3A. Available settings are shown below:

Δt (ms) is a time delay which is introduced to the residual current (earth leakage) protection characteristic. Available settings are shown below. It can also be set to 0 (max. actual tripping time is 40ms) or NT (No Trip - tripping time = ∞). The maximum breaking time at each setting is shown in brackets. Note that if $I_{\Delta n}$ is set at 30mA, Δt defaults to 0.

I_R is the adjustable tripping threshold for overload protection. It can be set between 0.63 and 1.0 times I_n . Available I_n ratings are shown below:

I_i is the tripping threshold for short-circuit protection. It is fixed at the values shown below:

Model	$I_{\Delta n}$ (A)	Δt (ms)	I_n (A)	I_i
ZE125, ZS125	0.03, 0.1, 0.3, 0.5, 1, 3	0 (40), 60 (195), 200 (365), 400 (620), 700 (950), NT (∞)	20, 32, 50, 63, 100	$12 \times I_n$ (+/- 20%)
ZE125, ZS125	0.03, 0.1, 0.3, 0.5, 1, 3	0 (40), 60 (195), 200 (365), 400 (620), 700 (950), NT (∞)	125	$10 \times I_n$ (+/- 20%)
ZE250, ZS250	0.03, 0.1, 0.3, 0.5, 1, 3	0 (40), 60 (195), 200 (365), 400 (620), 700 (950), NT (∞)	160	$13 \times I_n$ (+/- 20%)
ZE250, ZS250	0.03, 0.1, 0.3, 0.5, 1, 3	0 (40), 60 (195), 200 (365), 400 (620), 700 (950), NT (∞)	250	$10 \times I_n$ (+/- 20%)

ORDER CODES

125A FRAME CBRS



Model	I _R (A)	3P	4P	3P	4P
				with residual current monitor and remote trip module	
ZE125-NJ I _{cu} = 25kA	12.5-20	4547560 622106	4547560 622205	4547560 622700	4547560 622809
	20-32	4547560 622113	4547560 622212	4547560 622717	4547560 622816
	32-50	4547560 622120	4547560 622229	4547560 622724	4547560 622823
	40-63	4547560 622137	4547560 622236	4547560 622731	4547560 622830
	63-100	4547560 622144	4547560 622243	4547560 622748	4547560 622847
	80-125	4547560 622151	4547560 622250	4547560 622755	4547560 622854
ZS125-NJ I _{cu} = 36kA	12.5-20	4547560 622502	4547560 622601	4547560 623103	4547560 623202
	20-32	4547560 622519	4547560 622618	4547560 623110	4547560 623219
	32-50	4547560 622526	4547560 622625	4547560 623127	4547560 623226
	40-63	4547560 622533	4547560 622632	4547560 623134	4547560 623233
	63-100	4547560 622540	4547560 622649	4547560 623141	4547560 623240
	80-125	4547560 622557	4547560 622656	4547560 623158	4547560 623257
ZS125-GJ I _{cu} = 65kA	12.5-20	4547560 622304	4547560 622403	4547560 622908	4547560 623004
	20-32	4547560 622311	4547560 622410	4547560 622915	4547560 623011
	32-50	4547560 622328	4547560 622427	4547560 622922	4547560 623028
	40-63	4547560 622335	4547560 622434	4547560 622939	4547560 623035
	63-100	4547560 622342	4547560 622441	4547560 622946	4547560 623042
	80-125	4547560 622359	4547560 622458	4547560 622953	4547560 623059

250A FRAME CBRS



Model	I _R (A)	3P	4P	3P	4P
				with residual current monitor and remote trip module	
ZE250-NJ I _{cu} = 25kA	100-160	4547560 642807	4547560 642906	4547560 644009	4547560 644108
	160-250	4547560 642814	4547560 642913	4547560 644016	4547560 644115
ZS250-NJ I _{cu} = 36kA	100-160	4547560 643002	4547560 643101	4547560 644207	4547560 644306
	160-250	4547560 643019	4547560 643118	4547560 644214	4547560 644313
ZS250-GJ I _{cu} = 65kA	100-160	4547560 643200	4547560 643309	4547560 644405	4547560 644504
	160-250	4547560 643217	4547560 643316	4547560 644412	4547560 644511

ACCESSORIES

Refer to "TemBreak 2, The Ultimate Safety Breaker",
16 – I61EU for order codes for accessories

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CAT REF. 20-P41E

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