



Moulded Case Circuit Breakers (MCCB)

Circuit Breakers Type		FD 63/160				
Denomination		E	S	N	H	L
EN 60947-2 standard						
Poles	Number of				3,4	
Rated insulation voltage	Ui (Volts)	750	750	750		
Rated impulse withstand voltage	Uimp [Kilovolt]	8	8	8		
operational voltage Ue	Volts AC	690	690	690		
	Volts DC	-	500	500		
Line Protections Device						
Category of use					A	
Suitable for use as a isolator	Positive ON & OFF				Yes	
Rated current Ith = Ie	A at 40°C				63 or 160	
Ultimate breaking capacity Icu [kA]	230/240V AC	40	50	85	100	200
	400/415V AC	25	36	50	80	150
	440V AC	14	25	30	65	130 ⁽²⁾
	500V AC	12	18	22	36	50 ⁽²⁾
	690V AC	4.5	6	8	10	12
	250V DC Single pole	-	-	40	65	100
Service breaking capacity Ics (%Icu)	500V DC Two pole	-	-	40	65 ⁽¹⁾	100 ⁽¹⁾
	< 500V	100%	75%	100%	100%	100%
Single phase breaking capacity IIT [kA]	690V AC	75%	75%	50%	50%	35%
	230V AC	25	25	50	80	150
Endurance (CO operations)	400/415V AC	4.5	4.5	8	10	12
	Mechanical	10000		25000		
	Electrical at In	5000		10000		
Endurance (On-Tripped operations)	Electrical at In/2	10000		20000		
	Mechanical	4000		10000		
Trip Units	Interchangeable	No		No		
	Thermal magnetic-line					
	Thermal magnetic generator			GTM		
	Thermal magnetic selective magnetic only			LTMD		
Circuit Breaker type and denomination				Mag Break™ FD160Y		
EN 60947-3 standard						
Non Automatic Breakers (Switch)						
Rated current In (class AC23)	220V AC to 690V AC	63		160		
Rated making capacity	Icm (kA peak)	1.7		2.8		
Short-term withstand current Icw [kA]	Icw eff. 1 second	1.2		2		
	Icw eff. 3 seconds	1.2		2		
Circuit Breaker type				FD63/160		
Denomination				N	H	L
EN 60947-4 standard						
Use in motor circuits						
Rated current Ith A at	A at 65°C				FD50-50 FD160-100	
Endurance (CO operations)	Mechanical				25000	
	Electrical at In class AC23				10000	
	Operations per hour				120	
Protection	Short-circuit only (sep. overload device)				Mag Break™	
	Overload class 10 and short-circuit					
	Max In (A) class 10				FD63-50 FD160-100	
	Max In (A) class 30				FD63-50 FD160-80	
	Earth fault unit (differential)				Optional FDQ type	
Circuit Breaker / Switch type		FD63/160 all types				
NEMA AB1 Standard						
3ph. interruption ratings [kA]	240V AC	-	50	65	100	-
	480V AC	-	25	36	50	-
	600V AC	-	6	8	10	-
Installation						
Mounting	ON symmetrical DIN Rail	yes		yes		
	Fixed	yes		yes		
	Plug in	yes		yes		
Connection	Draw out	no		no		
	Front	yes		yes		
	Rear	No		yes		
Dimensions [w x h x d] mm	3 Pole, fixed front Connection	81 x 130 x 85		81 x 130 x 85		
	4 pole, fixed front connection	108 x 130 x 85		108 x 130 x 85		
Weight (kg)	3 Pole, fixed front Connection	0.4		0.9		
	4 pole, fixed front connection	For single pole		1.3		

(1) N Type only.

(2) Use 3 Poles.

(3) Use 2 Poles.

(4) 160 Rating only; derate to 65kA at 440V and 36kA at 500V

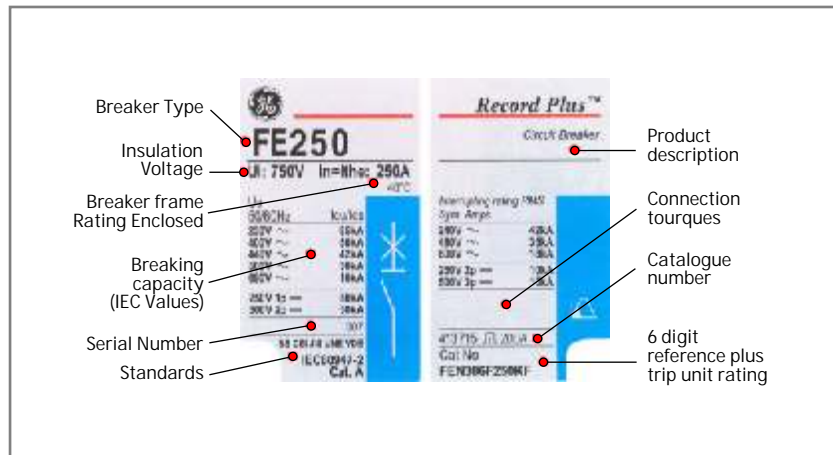
Record Plus



FE 250				FG400			FG630			FK800			FK1250			FK1600	
V	N	H	L	N	H	L	N	H	L	N	H	L	N	H	L	N	H
	3.4			3.4			3.4			3.4			3.4			3.4	
690	750			750			750			1000			1000			1000	
8	8			8			8			8			8			8	
500	690			690			690			690			690			690	
440	500			-			-			500			500			500	
	A			B ⁽⁵⁾			B ⁽⁵⁾			B			B			B	
	Yes			Yes			Yes			Yes			Yes			Yes	
	250			400			630			800			1250			1600	
65	85	100	200	85	100	200	85	100	200	85	100	170	85	100	170	85	100
36	50	80	150	50	80	150	50	80	150	50	80	100	50	80	100	50	80
25	42	65	130	42	65	130	42	65	130	42	65	80	42	65	80	42	65
18	30	50	100	30	50	100	30	50	100	36	42	50	36	42	50	36	42
-	10	15	22	10	22	75 ⁽⁷⁾	10	22	75 ⁽⁷⁾	20	25	30	20	25	30	20	25
25	50	85	100							50 ⁽³⁾	60 ⁽³⁾	80 ⁽³⁾	50 ⁽³⁾	60 ⁽³⁾	80 ⁽³⁾	-	-
-	50	85 ⁽¹⁾	100 ⁽¹⁾							36 ⁽²⁾	50 ⁽²⁾	60 ⁽²⁾	36 ⁽²⁾	50 ⁽²⁾	60 ⁽²⁾	-	-
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	75%	50%	100%	75%	50%	100%	75%
-	100%	75%	50%	50%	45%	25%	50%	45%	25%	50%	75%	50%	50%	75%	50%	50%	75%
36	50	80	150	50	80	150	50	80	150	50	80	100	50	80	100	50	80
-	10	15	22	10	(6)	(6)	10	(6)	(6)	20	25	30	10	25	30	10	25
10000	25000			20000			20000			10000			20000			10000	
5000	10000			7500			7500			4000			7500			2000	
10000	20000			15000			15000			8000			15000			4000	
4000	10000			8000			8000			4000			8000			2000	
No	Yes			Yes			Yes			No			No			No	
LTM										LTM			LTM				
	LTMD																
	Mag Break™			Mag Break™													
	FE250Y			FG400Y			FG630Y			FK800Y			FK1250Y			FK1600Y	
	250			400			630			800			1250			1600	
	6.4			8.5			11.5			14.1			21.2			28.3	
	4			5			6.5			10			15			20	
	4			5			6.5			10			15			20	
	FE250			FG400			FG630			FK800			FK1250			FK1600	
	N	H	L	N	H	L	N	H	L	N	H	L	N	H	L	N	H
	225			350			500			720			1000				
	25000			20000			20000			10000			10000				
	10000			7500			5000			4000			3000				
	120			120			60			60			60				
	Mag Break™			Mag Break™			Mag Break™			Mag Break™			Mag Break™				
	SMR1			SMR1 or SMR2			SMR1 or SMR2										
	225			350			500			720			1000				
	225			350			500			720			1000				
	Optional FEQ type			Optional FEQ type			Optional FGQ type										
	FE250 all types			FG400 all types			FG630 all types			FK800 all types			FK1250 all types			FK1250 all types	
56	100	150	200	100	150	200	100	150	200	85	-	-	85	-	-	85	-
36	50	65	130	50	65	130	50	65	130	42	-	-	42	-	-	42	-
22	25	36	42	25	36	42	25	36	42	25	-	-	25	-	-	25	-
	no			no			no			no			no			no	
	yes			yes			yes			yes			yes			yes	
	yes			yes			yes			no			no			no	
	yes			yes			yes			yes			yes			yes	
	yes			yes			yes			yes			yes			yes	
	yes			Yes			yes			YES			yes			yes	
	105 x 170 x 95			140 x 265 x 115			140 x 265 x 115			210 x 320 x 160			210 x 320 x 160			210 x 320 x 160	
	140 x 170 x 95			185 x 265 x 115			185 x 265 x 115			280 x 320 x 160			185 x 320 x 160			185 x 320 x 160	
	1.6			4.5			4.5			12.2			18.0			18.0	
	2.1			6.0			6.0			15.1			23.4			23.4	

(5) 350 and 500A executions only
 (6) Please contact us

(7) On use of Fg400 and FG630L type at 690V, one
 Lond and widened termina shield is required



Certification

The Record Plus™ line of circuit breakers has been designed to comply with the following standards:

- EN 60947 Low-voltage switchgear and controlgear:
 - EN 60947-1: General rules
 - EN 60947-2: Circuit-breakers
 - EN 60947-3: Switches, disconnectors, switch-disconnectors and fuse-combination units
 - EN 60947-4-1: Contactors and motor-starters
 - Section One: Electromechanical contactors and motorstarters
 - EN 60947-5-1: Control circuit devices and switching elements
 - Section One: Electromechanical control circuit devices
- This has been verified by two testing authorities:
 LOVAG and KEMA
 (appropriate certificates are available on request)

By meeting the international standards mentioned here. The requirements are met of: BS, VDE, UTE, KEMA, CEI. Record Plus breakers have been tested in accordance with the NEMA standards

For the Record Plus product certificates are available from the following regulatory bodies:
 Germanische Lloyds - RINA
 Lloyds Register of Shipping - CCC (China)
 UL® 489 and UL486a and b (specific US types)
 Further tests are being undertaken to meet the requirements of the following regulatory bodies:
 Bureau Veritas - Det Norske Veritas

Please contact us to check the availability of individual certificates.



Record Plus



LTM
Line thermal magnetic protection

LTMD
Selective thermal magnetic protection

FD Frame

Breaking Capacities

3 and 4 pole types
Icu 400/415V AC
in kA eff.

Type	E	S	N	H	L
FD63	25	36	50	80	150
FD160	25	36	50	80	150

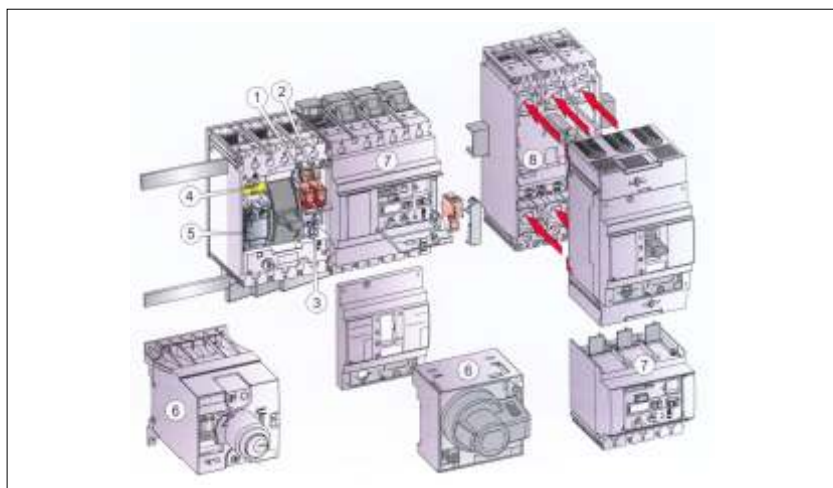
Protections

Trip Unit	Rated Current (A)	LTM	LTMD
FD63 (3 & 4 pole)	16	C,E	S,N,H
	20	C,E	S,N,H
	25	C,E	S,N,H,L
	30		
	32	C,E	S,N,H,L
	40	C,E	S,N,H,L
	50	C,E	S,N,H,L
FD160 (3 & 4 pole)	63	C,E	S,N,H,L
	80	C,E	S,N,H,L
	100	C,E	S,N,H,L
	125	C,E	S,N,H,L
	160	C,E	S,N,H,L

Number of poles/ protected poles (trips)	LTM	LTMD
3 pole 3 trips	C,E	S,N,H,L
4 pole 4 trips	C,E	S,N,H,L

Accessories

- ① Auxiliary contact left mounted (NO or NC)
- ② Auxiliary contact right mounted (NO or NC)
- ③ Bell Alarm trip unit (NO or NC)
- ④ Bell Alarm mechanism (CO)⁽¹⁾
- ⑤ Shunt or Undervoltage release
- ⑥ Operator
Rotary Handle
Electrical Operator
- ⑦ RCD, side or bottom mounted⁽¹⁾
(Insert indicates Bell alarm contact mounting)
- ⑧ Plug in system⁽¹⁾

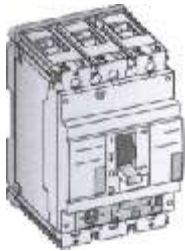


(1) Not applicable for some FDC and FDE types.
(2) Rated current > 63A



FD63/160 - Complete Circuit Breaker

Line Thermal Magnetic LTM (adjustable thermals)



In (A)	3 pole 3 trips		4 pole 4 trips	
	Cat. No.	Code No.	Cat. No.	Code No.
16	FDE35TC016EF	402430001	FDE45TC016EF	402430008
20	FDE35TC020EF	402430002	FDE45TC020EF	402430009
25	FDE35TC025EF	402430003	FDE45TC025EF	402430010
32	FDE35TC032EF	402430004	FDE45TC032EF	402430011
40	FDE35TC040EF	402430005	FDE45TC040EF	402430012
50	FDE35TC050EF	402430006	FDE45TC050EF	402430013
63	FDE35TC063EF	402430007	FDE45TC063EF	402430014
80	FDE35TC080GF	402430276	FDE45TC080GF	402430299
100	FDE35TC100GF	402430279	FDE45TC100GF	402430302
125	FDE35TC125GF	402430282	FDE45TC125GF	402430305
160	FDE35TC160GF	402433566	FDE45TC160GF	402433569

Selective Thermal Magnetic LTMD (settable thermals)



In (A)	3 pole 3 trips		4 pole 4 trips	
	Cat. No.	Code No.	Cat. No.	Code No.
16	FDS35TD016ED	402430161	FDS45TD016ED	402430224
20	FDS35TD020ED	402430163	FDS45TD020ED	402430226
25	FDS35TD025ED	402430165	FDS45TD025ED	402430228
32	FDS35TD032ED	402430167	FDS45TD032ED	402430230
40	FDS35TD040ED	402430169	FDS45TD040ED	402430232
50	FDS35TD050ED	402430178	FDS45TD050ED	402430241
63	FDS35TD063ED	402432952	FDS45TD063ED	402432964
80	FDS35TD080GD	402432955	FDS45TD080GD	402432967
100	FDS35TD100GD	402432958	FDS45TD100GD	402432970
125	FDS35TD125GD	402432961	FDS45TD125GD	402432973
160	FDS35TD160GD	402433602	FDS45TD160GD	402433604

Selective Thermal Magnetic LTMD (settable thermals)



In (A)	3 pole 3 trips		4 pole 4 trips	
	Cat. No.	Code No.	Cat. No.	Code No.
16	FDN36TD016ED	402430100	FDN46TD016ED	402430131
20	FDN36TD020ED	402430101	FDN46TD020ED	402430132
25	FDN36TD025ED	402430102	FDN46TD025ED	402430133
32	FDN36TD032ED	402430103	FDN46TD032ED	402430134
40	FDN36TD040ED	402430104	FDN46TD040ED	402430135
50	FDN36TD050ED	402430105	FDN46TD050ED	402430136
63	FDN36TD063ED	402430106	FDN46TD063ED	402430137
80	FDN36TD080GD	402430630	FDN46TD080GD	402430752
100	FDN36TD100GD	402430633	FDN46TD100GD	402430755
125	FDN36TD125GD	402430636	FDN46TD125GD	402430758
160	FDN36TD160GD	402433572	FDN46TD160GD	402433590



FD63/160 - Complete Circuit Breaker

Line Thermal Magnetic LTM (adjustable thermals)



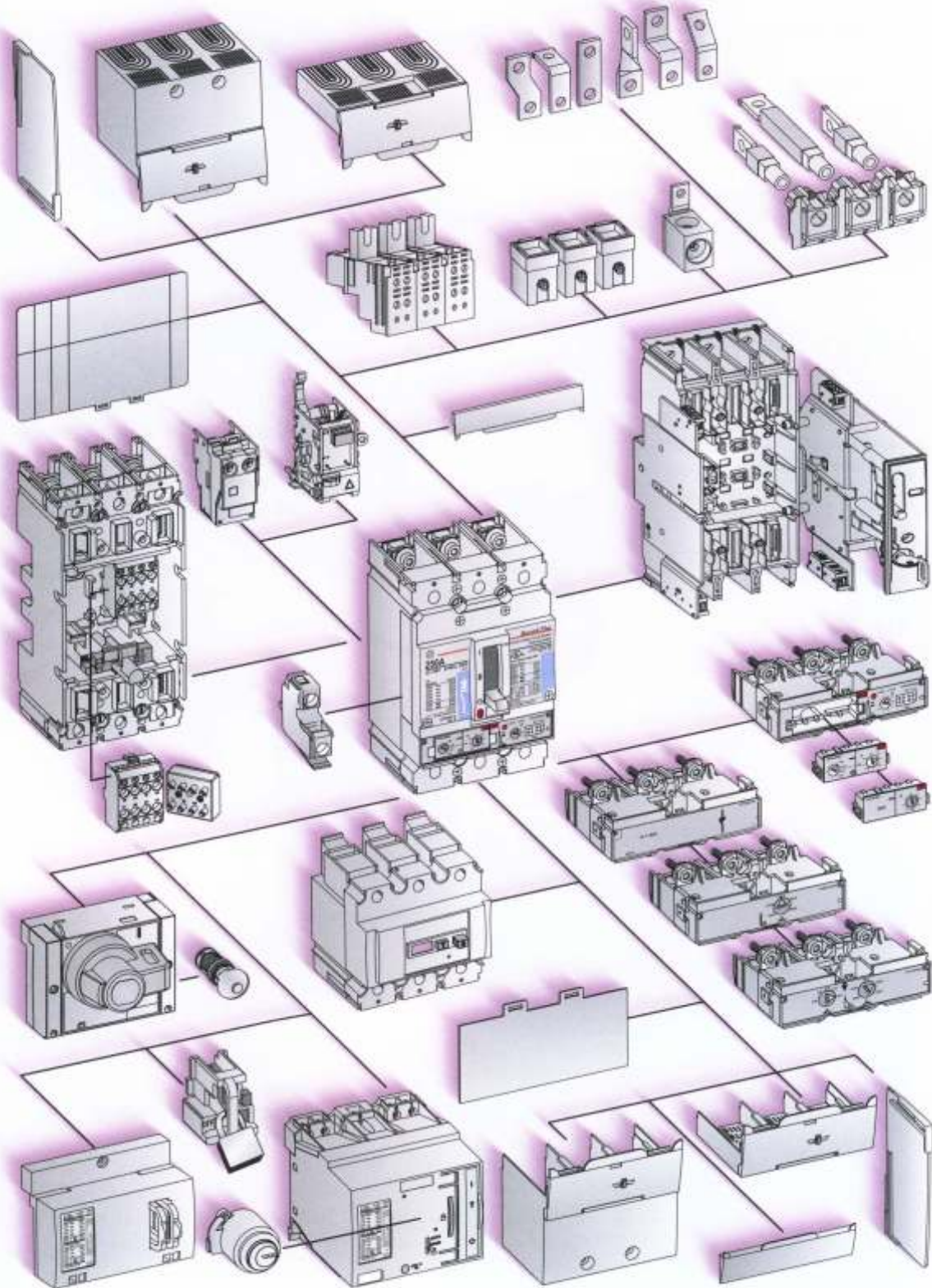
In (A)	3 pole 3 trips		4 pole 4 trips	
	Cat. No.	Code No.	Cat. No.	Code No.
16	FDH36TD016ED	402430020	FDH46TD016ED	402430051
20	FDH36TD020ED	402430021	FDH46TD020ED	402430052
25	FDH36TD025ED	402430022	FDH46TD025ED	402430053
32	FDH36TD032ED	402430023	FDH46TD032ED	402430054
40	FDH36TD040ED	402430024	FDH46TD040ED	402430055
50	FDH36TD050ED	402430025	FDH46TD050ED	402430056
63	FDH36TD063ED	402430026	FDH46TD063ED	402430057
80	FDH36TD080GD	402430338	FDH46TD080GD	402430460
100	FDH36TD100GD	402430341	FDH46TD100GD	402430463
125	FDH36TD125GD	402430344	FDH46TD125GD	402430466
160	FDH36TD160GD	402435821	FDH46TD160GD	402435839

Selective Thermal Magnetic LTMD (settable thermals)



In (A)	3 pole 3 trips		4 pole 4 trips	
	Cat. No.	Code No.	Cat. No.	Code No.
25	FDL36TD025ED	402430070	FDL46TD025ED	402430090
32	FDL36TD032ED	402430071	FDL46TD032ED	402430091
40	FDL36TD040ED	402430072	FDL46TD040ED	402430092
50	FDL36TD050ED	402430073	FDL46TD050ED	402430093
63	FDL36TD063ED	402430074	FDL46TD063ED	402430094
80	FDL36TD080GD	402430518	FDL46TD080GD	402430591
100	FDL36TD100GD	402430521	FDL46TD100GD	402430594
125	FDL36TD125GD	402430524	FDL46TD125GD	402430597
160	FDL36TD160GD	402435845	FDL46TD160GD	402435854

Record Plus





Record Plus



FE Frame

Breaking Capacities

Icu 400/415V AC in kA eff.

Type	V	N	H	L
FE250	36	50	80	150

Protections

Trip Unit	Rated Current (A)	LTM	LTMD
FE250	200 250	V V	N,H,L N,H,L

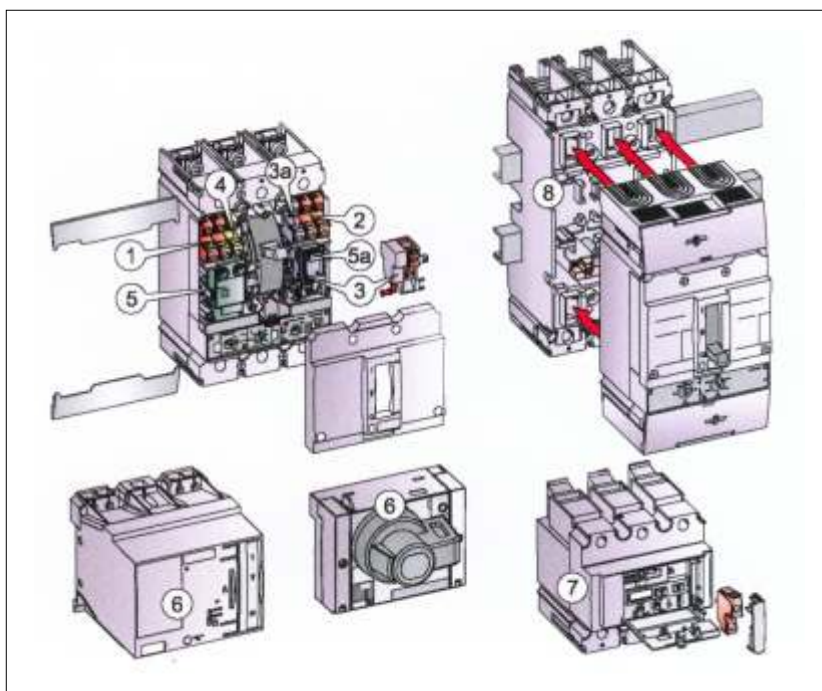
Number of poles/ protected poles (trips)		
3 pole 3 trips 4 pole 4 trips	V,N,H,L V,N,H,L	N,H,L N,H,L

LTM
Line thermal magnetic protection

LTMD
Selective thermal magnetic protection

Accessories

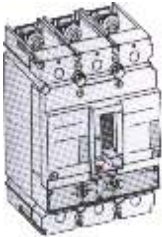
- ① Auxiliary contact left mounted (NO or NC) 1 or 2 pcs.
- ② Auxiliary contact right mounted (NO or NC) 1 or 2 pcs.
- ③ Bell Alarm thermal magnetic trip unit (NO or NC)
- ③^a Bell Alarm electronic trip unit (NO or NC)
- ④ Bell Alarm mechanism (NO or NC)
- ⑤ Shunt or Undervoltage release
- ⑤^a Actuator for electronic trip unit.
- ⑥ Operators
 - Rotary handle
 - Electrical operator
- ⑦ Bottom mounted RCD (below trip unit)
(Insert indicates Bell alarm contact mounting)
- ⑧ Plug-in or draw-out system





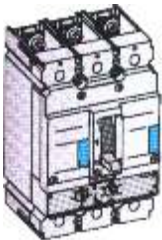
FE250 - Complete Circuit Breaker

Line Thermal Magnetic LTM (adjustable thermals)



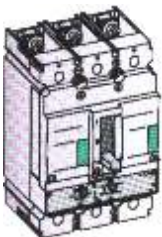
36kA FEV	In (A)	3 pole 3 trips		4 pole 4 trips	
		Cat. No.	Code No.	Cat. No.	Code No.
200	FEV36TA200KF	402431058	FEV46TA200KF	402431094	
250	FEV36TA250KF	402431061	FEV46TA250KF	402431097	

Selective Thermal Magnetic LTM (adjustable thermals)



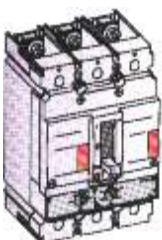
50kA FEN	In (A)	3 pole 3 trips		4 pole 4 trips	
		Cat. No.	Code No.	Cat. No.	Code No.
200	FEN36TD200KF	402432979	FEN46TD200KF	402433079	
250	FEN36TD250KF	402432982	FEN46TD250KF	402433082	

Selective Thermal Magnetic LTM (adjustable thermals)



80kA FEH	In (A)	3 pole 3 trips		4 pole 4 trips	
		Cat. No.	Code No.	Cat. No.	Code No.
200	FEH36TD200KF	402432076	FEH46TD200KF	402432311	
250	FEH36TD250KF	402432096	FEH46TD250KF	402432316	

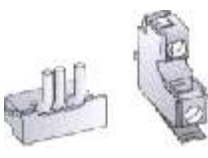
Selective Thermal Magnetic LTM (adjustable thermals)




150kA FEL	In (A)	3 pole 3 trips		4 pole 4 trips	
		Cat. No.	Code No.	Cat. No.	Code No.
200	FEL36TD200KF	402432357	FEL46TD200KF	402432933	
250	FEL36TD250KF	402432361	FEL46TD250KF	402432936	




FD & FE Internal Accessories

Auxiliary/Bell Alarm	FD Frame		FE Frame		
		Cat. Nr.	Code No.	Cat. Nr.	Code No.
		Normally Open		Normally Open	
	Aux. switch right mounted	FAS10R	402430837	FAS10R	402430837
	Aux. switch left mounted	FAS10L	402430834	FAS10L	402430834
	Bell alarm Mechanism			FABAM10	402432003
		Normally Close		Normally Close	
			FABAM01	402432000	

Releases	FD Frame		FE Frame		
		Shunt		Shunt	
	220/240V AC 250 V DC	FASHTN	402430852	FASHTN	402430852
		Undervoltage		Undervoltage	
	220/240V AC 250 V DC	FAUVRN	402430870	FAUVRN	402430870

Operators

Electrical Operators	FD63/160 Frame		FD160/250 Frame		
	220/250V AC/DC	FDEMFN	402430938	FEEMFN	402432064



Record Plus



FG Frame

Breaking Capacities

Icu 400/415V AC in kA eff.

Type	N	H	L
FG400	50	80	150
FG630	50	80	150

Protections

Trip Unit	Rated Current (A)	SMR1	MagBreak™
FG400	400	N, H, L	-
FG630	630	N, H, L	-

Number of poles/ protected poles (trips)		
3 pole 3 trips 4 pole 3 trips	N, H, L N, H, L	N, H, L N, H, L

LTM⁽¹⁾
Line thermal magnetic protection

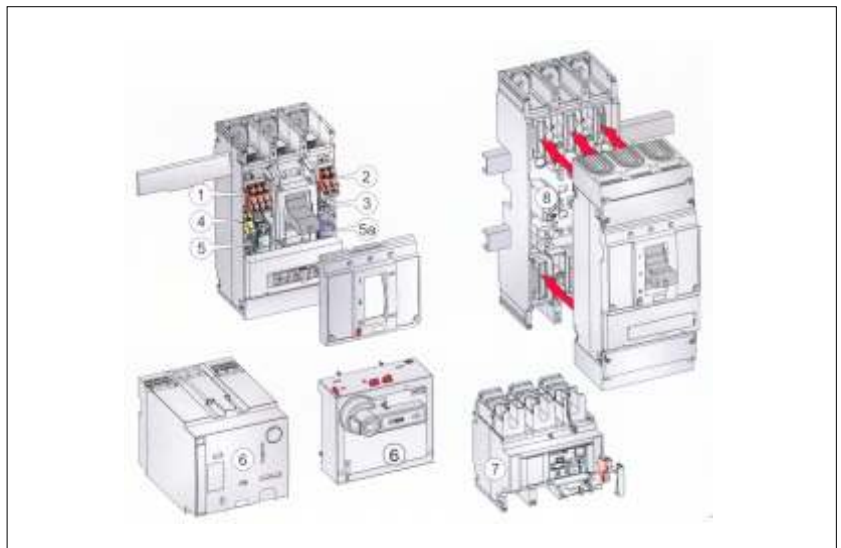
SMR1
Selective Electronic protection

MagBreak™
Magnetic only protections

Y
Non Automatic or switch
(not mentioned in table)

- ① Auxiliary contact left mounted (NO or NO 1, 2 or 3pcs.
- ② Auxiliary contact right mounted (NO or NCI 1 or 2pcs.
- ③ Bell Alarm thermal magnetic trip unit (NO or NC)
- ③^a Bell Alarm electronic trip unit (NO or NC)
- ④ Bell Alarm mechanism (NO or NO ©)
- ⑤ Shunt or Undervoltage release ©a
- ⑤^a Actuator for electronic trip unit. ©
- ⑥ Operators
 - Rotary handle
 - Electrical operator
- ⑦ Bottom mounted RCD (below trip unit) (Insert indicates Bell alarm contact mounting) Bottom mounted version is also available.
- ⑧ Plug in or draw out system

Accessories





FG400 - Complete Circuit Breaker

Selective Electronic Trip Unit (SMR1) without Rating Plug



50kA FGH	In (A)	3 pole		4 pole	
		Cat. No.	Ref. No	Cat. No.	Ref. No
400	FGN36AA400LLF	431455	FGN46AA400LLF	431536	



80kA FGH	In (A)	3 pole		4 pole	
		Cat. No.	Ref. No	Cat. No.	Ref. No
400	FGH36AA400LLF	431032	FGH46AA400LLF	431106	



150kA FGH	In (A)	3 pole		4 pole	
		Cat. No.	Ref. No	Cat. No.	Ref. No
400	FGH36AA400LLF	431246	FGH46AA400LLF	431330	

Type line 0.625 x In

Adjustable Rating Plugs for Trip Units SMR1



In (A)	3 Pole 3 trips		4 Pole 3 trips	
	Cat. No.	Ref. No	Cat. No.	Ref. No
400	FGRJ3LL0400	434151	FGRJ43LL0400	434163



FG630 - Complete Circuit Breaker

Selective Electronic Trip Unit (SMR1) without Rating Plug



50kA FGN	In (A)	3 pole		4 pole ⁽¹⁾	
		Cat. No.	Ref. No	Cat. No.	Ref. No
630	FGN36AA630NNF	431461	FGN46AA630NNF	431539	



80kA FGH	In (A)	3 pole		4 pole ⁽¹⁾	
		Cat. No.	Ref. No	Cat. No.	Ref. No
630	FGH36AA630NNF	431038	FGH46AA630NNF	431132	



150kA FGL	In (A)	3 pole		4 pole ⁽¹⁾	
		Cat. No.	Ref. No	Cat. No.	Ref. No
630	FGL36AA630NNF	431249	FGL46AA630NNF	431333	

Type line 0.625 x In

Adjustable Rating Plugs for Trip Units SMR1



In (A)	3 Pole 3 trips		4 Pole 3 trips ⁽¹⁾	
	Cat. No.	Ref. No	Cat. No.	Ref. No
630A	FGRJ3NN0630	433157	FGRJ43NN0630	433169

(1) Neutral on the left. If neutral on the right is needed, please contact us



FG - Internal Accessories

Contact



	Normally Open		Normally Closed	
	Cat. No.	Ref. No.	Cat. No.	Ref. No.
Aux. Switch right mounted	FAS10R	430837	FAS01R	430831
Aux. Switch left mounted	FAS10L	430834	FAS01L	430828
Bell alarm electronic trip unit	FABAT10	430818	FABAT01	430815
Bell alarm mechanism	FABAM10	432003	FABAM01	432000
Bell alarm RCD Device	FABAT10	430818	FABAT01	430815

Release



	Shunt		Undervoltage	
	Cat. No.	Ref. No.	Cat. No.	Ref. No.
220/240C AC/DC	FASHTN	430852	FAUVRN	430870

FG - Operator⁽⁵⁾

Electrical Operator



220/250C AC/DC	FGEMFN	432829

(5) FG frame electrical operators can only be supplied factory fitted, complete with breaker: please contact us for detail



Record Plus



FK Frame

Breaking Capacities

Icu 400/415V AC in kA eff.

Type	V	N	H	L
FK800	50	50	80	100
FK1250	50	50	80	100
FK1600	50	50	80	-

Protections

Trip Unit	Rated Current (A)	LTM	MagBreak™	SMR1e ⁽¹⁾
FK800	630 800	N, H, L N, H, L	N, H, L	N, H, L
FK1250	1000 1250	N, H, L N, H, L	N, H, L	N, H, L N, H, L
FK1600	1600			N, H

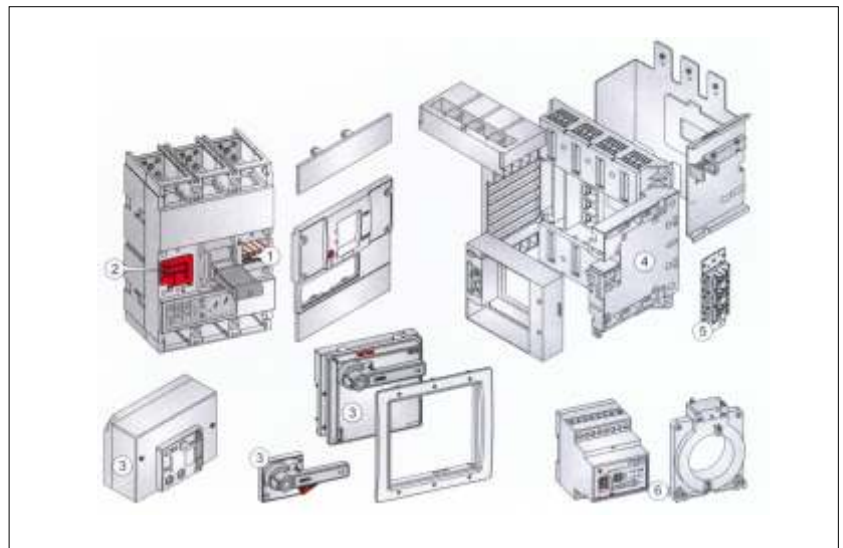
Number of poles/ protected poles (trips)			
3 pole 3 trips 4 pole 3 trips 4 pole 4 trips	N, H, L N, H, L	N, H, L N, H, L	N, H, L N, H, L N, H, L

(1) Switchable, 0% , 50% or 100% neutral protection

- LTM
Line thermal magnetic protection
- SMR1e
Selective Electronic protection
- MagBreak™
Magnetic only breaker for motor protection
- Y
Non Automatic or switch (not mentioned in table)

- ① A maximum of one Bell Alarm contact AND 3 aux. contacts (all of CO type)
- ② Shunt or Undervoltage release (5)
- ③ Operators
Rotary handle
OR
Electrical operator
- ④ Draw out system
- ⑤ Connectors for auxiliary wiring
- ⑥ RCD with separate sensor

Accessories





FK800 - Complete Circuit Breaker

Selective Electronic Trip Unit type SMR1e



50kA FKV	In (A)	3 Pole 3 trips		4 pole ⁽¹⁾ N selectable 0-50-100%	
		Cat. No.	Ref. No	Cat. No.	Ref. No
	800	FKV36NE800PPF	435041	FKV46NE800PPF	435042
50kA FKN	800	FKN36NE800PPF	435393	FKN46NE800PPF	435447
80kA FKH	800	FKH36NE800PPF	435285	FKH46NE800PPF	435339
100kA FKL	800	FKL36NE800PPF	435390	FKL46NE800PPF	435282
One code covers: A standard fixed front connection breaker + Assembled trip unit + Toggle Elongator -Breaker finishing covers + Fixation hardware					

FK1250 - Complete Circuit Breaker

Selective Electronic Trip Unit type SMR1e



50kA FKV	In (A)	3 Pole 3 trips		4 pole ⁽¹⁾ N selectable 0-50-100%	
		Cat. No.	Ref. No	Cat. No.	Ref. No
	1000	FKV36NE100SQF	435040	FKV46NE100SQF	435066
	1250	FKV36NE125SSF	435035	FKV36NE125SSF	435083
50kA FKN	1000	FKN36NE100SQF	435396	FKN46NE100SQF	435450
	1250	FKN36NE125SSF	435384	FKN36NE125SSF	435438
80kA FKH	1000	FKH36NE100SQF	435228	FKH46NE100SQF	435342
	1250	FKH36NE125SSF	435276	FKH36NE125SSF	435330
100kA FKL	1000	FKL36NE100SQF	435545	FKL46NE100SQF	435547
	1250	FKL36NE125SSF	435546	FKL36NE125SSF	435549
One code covers: A standard fixed front connection breaker + Assembled trip unit + Toggle Elongator -Breaker finishing covers + Fixation hardware					



FK1600 - Complete Circuit Breaker

Selective Electronic Trip Unit type SMR1e



50kA FKV	In (A)	3 Pole 3 trips		4 pole ⁽¹⁾ N selectable 0-50-100%	
		Cat. No.	Ref. No	Cat. No.	Ref. No
	1600	FKV36NE160TTF	435032	FKV46NE160TTF	435092
One code covers: A standard fixed front connection breaker + Assembled trip unit + + Fixation hardware (Electrical Operator not possible)					
50kA FKN	1600	FKN36NE160TTF	435387	FKN46NE160TTF	435441
80kA FKH	1600	FKH36NE160TTF	435279	FKH46NE160TTF	435333
One code covers: A standard fixed front connection breaker + Assembled trip unit + Toggle Elongator -Breaker finishing covers + Fixation hardware					

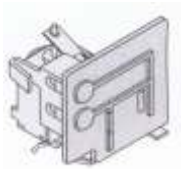
FK - Internal Accessories

Contact



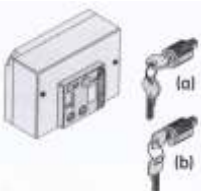
	Changeover	
	Cat. No.	Ref. No.
Aux. Switch right mounted CO	FNS11R	436401
Bell alarm contact right mounted CO	FNBA11R	435761

Release



	Shunt		Undervoltage	
	Cat. No.	Ref. No.	Cat. No.	Ref. No.
230V AC	-	-	FNUVR6	435699
220/240V AC - 220/2450V DC	FNSHTN	435696		

Electrical Operators



	Changeover	
	Cat. No.	Ref. No.
230V AC	FNEMF6	435689



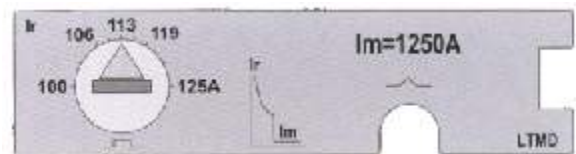
Record Plus

FD63/160 Breakers - trip unit overview

FD Frame				Trip unit overview									
Type	Sub type	Applicable for breaker types		In (A)	Thermal setting I _r		Magnetizing setting I _m		Neutral Protection				
					pick-up band 1.05 ÷ 1.3 I _r		pick-up band ± 20% I _m						
					min (A)	max (A)	fix (A)						
LTM	C.D E.D	C	E	16	I _r = 0.8÷1I _n	12.8	16	10 x I _n	160	=I _r			
				20		16	20		200				
				25		20	25		250				
				32		25.6	32		320				
				40		32	40		400				
				50		40	50		500				
				63		50.4	63		630				
				80		64	80		800				
				100		80	100		1000				
				125		100	125		1250				
				160		128	160		1280		8 x I _n	=I _r	
LTMD	D.D	S	N	H	L	I _r = 0.8÷1I _n	10 x I _n	1000	=I _r				
										16	12.8	16	160
										20	16	20	200
										25	20	25	250
										32	25.6	32	320
										40	32	40	400
										50	40	50	500
										63	50.4	63	630
										80	64	80	800
										100	80	100	1000
										125	100	125	1250
160	128	160	1280	8 x I _n	=I _r								

FE 250 Breakers - trip unit overview (electromagnetical)

FE Frame				Trip unit overview							
Type	Sub type	Applicable for breaker types		In (A)	Thermal setting I _r		Magnetizing setting I _m		Neutral Protection		
					pick-up band 1.05 ÷ 1.3 I _r		pick-up band ± 20% I _m				
					min (A)	max (A)	Min (A)	Max (A)			
LTMD	D.E	N	H	L	0.8÷1 x I _n	160	200	5÷10xI _n	1000	2000	=I _r
						200	250		1250	2500	=I _r
LTM	A.E	V			0.8÷1 x I _n	160	200	5÷10xI _n	1000	2000	=I _r
						200	250		1250	2500	=I _r





Record Plus

FG400 & FG630 Breakers - Electronic trip units type SMR1

FG Frame		Electronic trip unit overview									
		In* (A)	LT			ST			Neutral Protection		
			Pick up band $1.05 \div 1.2 I_r$ Ir setting Min (A) Max (A)			Pick up band $1.05 \pm 1.2 I_r$ Ir setting Min (A) Max (A)			4P4T	4P 3TN	3P4T
SMR1+ Adjustable rating plugs	N H L	FG400	400	0.625-1 xIn 16 steps line prot.	250	400	500	5200	=Ir	=Ir/2	Not Protected
		FG630	630		400	630	800	6300	=Ir	=Ir/2	



FK800, FK1250 and FK1600 Breakers - Electronic trip units overview

FK Frame		Electronic trip unit overview									
		In* (A)	LT			ST			Neutral Protection		
			Pick up band $1.05 \div 1.2 I_r$ Ir setting Min (A) Max (A)			Pick up band $\pm 20\% I_m$ Ir setting Min (A) Max (A)			Switchable type 4P4T 4P 3TN 3P4T		
SMR1e	N H L	FK800	800	0.4 x 1 In in 8 steps	320	800	480	8000	=Ir	=Ir/2	Not Protected
		FK1250	1000		400	1000	600	6000	=Ir	=Ir/2	
		FK1250	1250		500	1250	750	12500	=Ir	=Ir/2	
		FK1600	1600		640	1600	960	16000	=Ir	=Ir/2	