F.T.M.C.

CATALOGUE

F.T.M.C.

INTRODUCTION

- Farah Trading and Contracting Company (FTC Group) which is the headquarters established in 1962 has been the exclusive agent and licensee of Westinghouse Electric Co. for more than 38 years. FTC has always been a multi-business company. Over the past 54 years of innovation, it has evolved to seize new opportunities created by changes in technology and the economy.

- The history of FTC is a significant part of the history of technology in the Middle East following the evolution of electrical technology from the simplest early applications into the high-tech of the early 21st century. In 1999 Farraj Trading and Manufacturing Company (FTMC) was established to offer the market their circuit breakers manufacturing technology, production techniques and quality control that are under international standards such as IEC, ISO 9001:2008 ISO, 14001:2004 to become one of the major competitors in the market and one of the most important suppliers of circuits breakers in Gulf region and the Middle East.

- In 2010 FTC became partners with GE in five countries. To ensure quality, all our products are ASTA and KEMA certified. Farraj Trading and Manufacturing Company (F.T.M.C) is certified by ISO 9001: 2008 ISO, 14001:2004 and All product are ASTA & KEMA certified.

F.T.C. Group

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Panel Board

F.T.M.C. Products

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RCCB As per IEC 61008
RCBO As per IEC 61009-1
Isolator Switch As per IEC 60947-3

ACCESSORIES

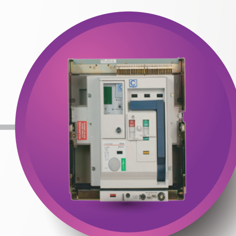
Contactor relays
Over load relays
Safety switch/ disconnect switches 40 to 1600A
Change Over Switches 40 to 1600A
ATS 63-800A as per IEC 60947-6-1
Panel Board Accessories

MCCB

Full range of MCCB according to IEC 60947-2
Frame FTCG (16-125A), 25kA
Frame FTCF (16-225A), 40kA,50kA & 65kA
Frame FTCJ (125-250A), 50kA,65kA & 85kA
Frame FTCK (160-400A), 50kA & 65kA
Frame FTCLG (400-630A), 50kA, 65kA & 85kA
Frame FTCL (700-800A), 50kA, 65kA & 85kA
Frame FTCN (800-1600A) 50kA & 65kA

PANEL BOARD & MDB

Final Distribution Board
Submain Distribution Board
Main Distribution Board Form 4 – type – 7
All are Tested at 55°C Ampient



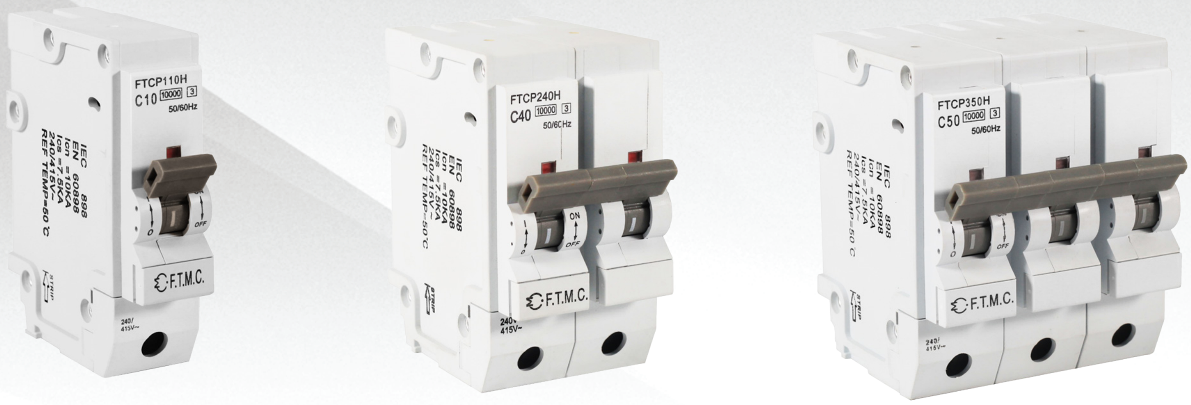
ACB

POWER-WAVE Frame (Air Circuit Breaker)
Frame size 1 - 400 - 2500A
Frame size 2 – 800 - 4000A
Fixed & Withdrawable type as per IEC0947-2
Digital microprocessor trip unit LSI or LSIG

F.T.M.C.

F.T.M.C.TYPE FTCP

Plug-in IEC60898 Circuit Breakers 10kA & 6kA (240V/415V)



FTCP Plug-in IEC60898 Circuit Breakers. 10kA (240V/415V)

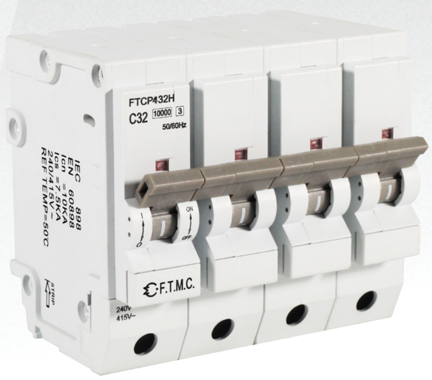
Rating	Ref.No.	1Pole	Ref.No.	2Pole	Ref.No.	3Poles	Ref.No.	4Poles
6	F100000	FTCP106H	F100009	FTCP206H	F100018	FTCP306H	F100027	FTCP406H
10	F100001	FTCP110H	F100010	FTCP210H	F100019	FTCP310H	F100028	FTCP410H
16	F100002	FTCP116H	F100011	FTCP216H	F100020	FTCP316H	F100029	FTCP416H
20	F100003	FTCP120H	F100012	FTCP220H	F100021	FTCP320H	F100030	FTCP420H
25	F100004	FTCP125H	F100013	FTCP225H	F100022	FTCP325H	F100031	FTCP425H
32	F100005	FTCP132H	F100014	FTCP232H	F100023	FTCP332H	F100032	FTCP432H
40	F100006	FTCP140H	F100015	FTCP240H	F100024	FTCP340H	F100033	FTCP440H
50	F100007	FTCP150H	F100016	FTCP250H	F100025	FTCP350H	F100034	FTCP450H
63	F100008	FTCP163H	F100017	FTCP263H	F100026	FTCP363H	F100035	FTCP463H

FTCP Plug-in IEC60898 Circuit Breaker. 6kA (240V/415V)

Rating	Ref.No.	1 Pole	Ref.No.	2 Pole	Ref.No.	3 Poles	Ref.No.	4Poles
6	F100036	FTCP106S	F100045	FTCP206S	F100054	FTCP306S	F100063	FTCP406S
10	F100037	FTCP110S	F100046	FTCP210S	F100055	FTCP310S	F100064	FTCP410S
16	F100038	FTCP116S	F100047	FTCP216S	F100056	FTCP316S	F100065	FTCP416S
20	F100039	FTCP120S	F100048	FTCP220S	F100057	FTCP320S	F100066	FTCP420S
25	F100040	FTCP125S	F100049	FTCP225S	F100058	FTCP325S	F100067	FTCP425S
32	F100041	FTCP132S	F100050	FTCP232S	F100059	FTCP332S	F100068	FTCP432S
40	F100042	FTCP140S	F100051	FTCP240S	F100060	FTCP340S	F100069	FTCP440S
50	F100043	FTCP150S	F100052	FTCP250S	F100061	FTCP350S	F100070	FTCP450S
63	F100044	FTCP163S	F100053	FTCP263S	F100062	FTCP363S	F100071	FTCP463S

F.T.M.C.TYPE FTCP

Plug-in IEC60898 Circuit Breakers 10kA & 6kA (240V/415V)



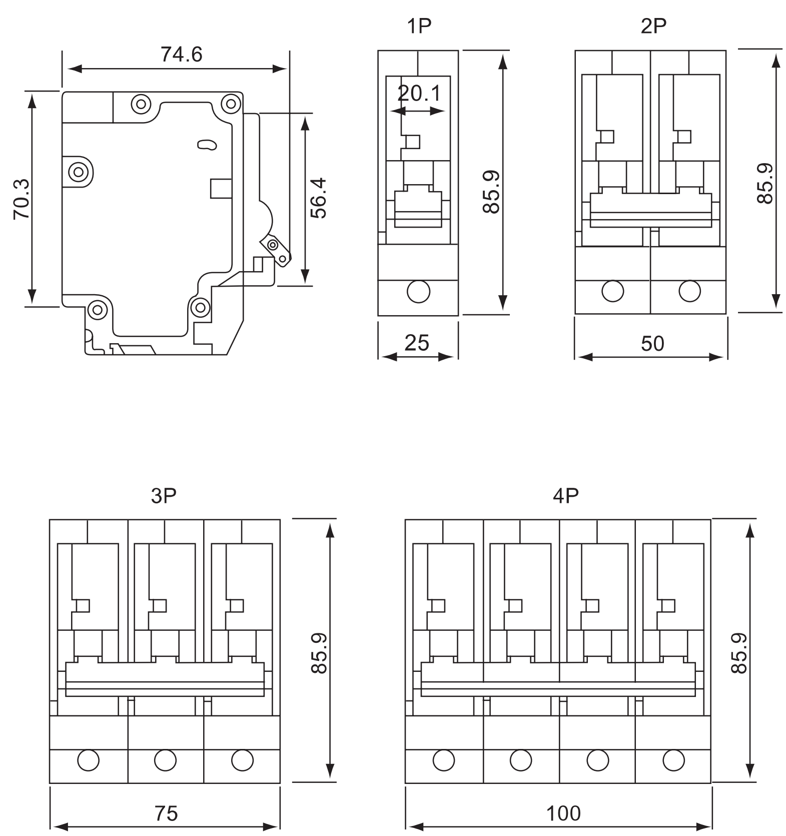
Feature

FTCP-MCBs are available with a breaking capacity of 10 kA & 6 kA to IEC60898 The MCB are calibrated to 40℃ MCBs can be supplied with 50℃ ambient calibration. To order insert at the end of MCB list number :- FTCP106H ref. (F100000).

Description

Protection and control of circuits against overloads & short circuits for domestic and industrial installations.

Dimensions



F.T.M.C.TYPE FTCB

Bolt -on IEC60898 Circuit Breakers 10kA & 6kA (240V/415V)

FTCB Bolt on IEC60898 Circuit Breakers. 10kA (240V/415V)

Rating	Ref.No.	1 Pole	Ref.No.	2 Pole	Ref.No.	3 Poles	Ref.No.	4 Poles
6	F100072	FTCB106H	F100081	FTCB206H	F100090	FTCB306H	F100099	FTCB406H
10	F100073	FTCB110H	F100082	FTCB210H	F100091	FTCB310H	F100100	FTCB410H
16	F100074	FTCB116H	F100083	FTCB216H	F100092	FTCB316H	F100101	FTCB416H
20	F100075	FTCB120H	F100084	FTCB220H	F100093	FTCB320H	F100102	FTCB420H
25	F100076	FTCB125H	F100085	FTCB225H	F100094	FTCB325H	F100103	FTCB425H
32	F100077	FTCB132H	F100086	FTCB232H	F100095	FTCB332H	F100104	FTCB432H
40	F100078	FTCB140H	F100087	FTCB240H	F100096	FTCB340H	F100105	FTCB440H
50	F100079	FTCB150H	F100088	FTCB250H	F100097	FTCB350H	F100106	FTCB450H
63	F100080	FTCB163H	F100089	FTCB263H	F100098	FTCB363H	F100107	FTCB463H

FTCB Bolt on IEC60898 Circuit Breaker. 6kA (240V/415V)

Rating	Ref.No.	1 Pole	Ref.No.	2 Pole	Ref.No.	3 Poles	Ref.No.	4 Poles
6	F100108	FTCB106S	F100117	FTCB206S	F100126	FTCB306S	F100135	FTCB406S
10	F100109	FTCB110S	F100118	FTCB210S	F100127	FTCB310S	F100136	FTCB410S
16	F100110	FTCB116S	F100119	FTCB216S	F100128	FTCB316S	F100137	FTCB416S
20	F100111	FTCB120S	F100120	FTCB220S	F100129	FTCB320S	F100138	FTCB420S
25	F100112	FTCB125S	F100121	FTCB225S	F100130	FTCB325S	F100139	FTCB425S
32	F100113	FTCB132S	F100122	FTCB232S	F100131	FTCB332S	F100140	FTCB432S
40	F100114	FTCB140S	F100123	FTCB240S	F100132	FTCB340S	F100141	FTCB440S
50	F100115	FTCB150S	F100124	FTCB250S	F100133	FTCB350S	F100142	FTCB450S
63	F100116	FTCB163S	F100125	FTCB263S	F100134	FTCB363S	F100143	FTCB463S

F.T.M.C.TYPE FTCB

Bolt -on IEC60898 Circuit Breakers 10kA & 6kA (240V/415V)

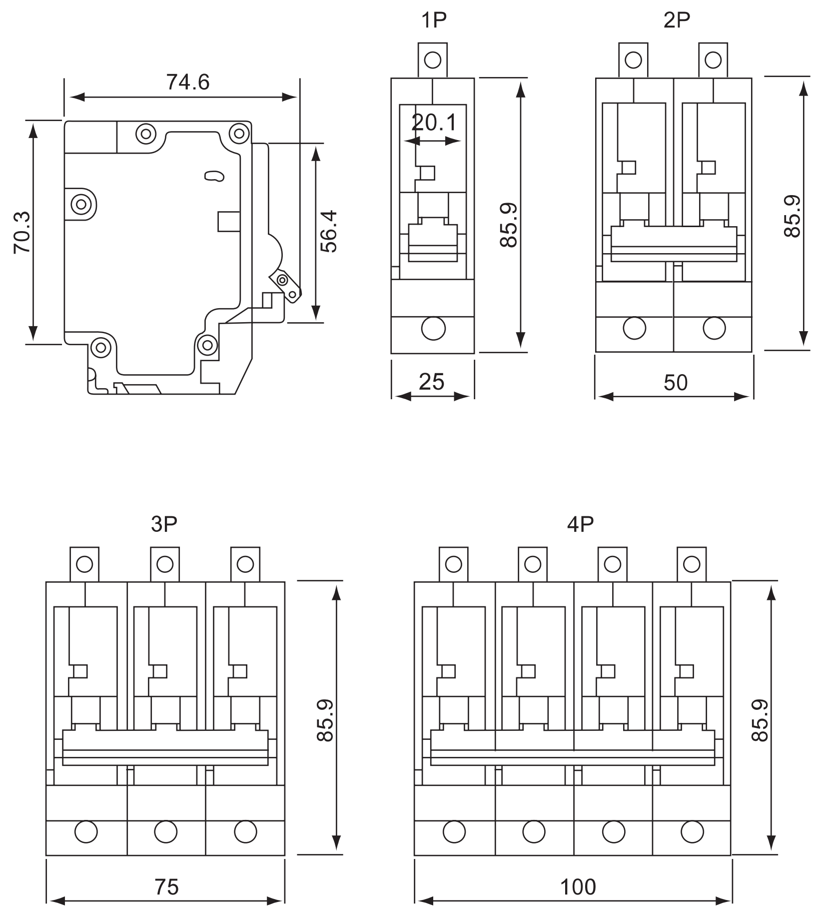
Feature

FTCB-MCBs are available with a breaking capacity of 10 kA & 6 kA to IEC60898 The MCB are calibrated to 40℃ MCBs can be supplied with 50℃ ambient calibration. To order insert at the end of MCB list number :- FTCB106H ref. (F100072)

Description

Protection and control of circuits against overloads & short circuits for domestic and industrial installations.

Dimensions



F.T.M.C.Type FTCOP, FTCOB, FTCOC

Plug-in RCBO IEC601009 10kA (240V/415V)

Feature

FTCOP, FTCOB, FTCOC-RCBOs
are available with a breaking capacity of
10kA to IEC601009 The RCBO are calibrated to 40℃
and can be supplied with 50℃ ambient calibration.
To order insert at the end of RCBO list number:
FTCOP10630H ref. F103122

FTCOP Electronic Combined RCBO/MCB Device , 10 kA 1 Pole 240V,30mA①

Rating	Ref.NO.	1 Pole	Sensitivity
6	F103122	FTCOP10630H	30
10	F100144	FTCOP11030H	30
16	F100145	FTCOP11630H	30
20	F100146	FTCOP12030H	30
25	F100147	FTCOP12530H	30
32	F100148	FTCOP13230H	30
40	F100149	FTCOP14030H	30

FTCOP Electronic Combined RCBO/MCB Device , 10 kA 1 Pole 240V,100mA

Rating	Ref. NO.	1 Pole	Sensitivity
6	F103123	FTCOP106100H	100
10	F100150	FTCOP110100H	100
16	F100151	FTCOP116100H	100
20	F100152	FTCOP120100H	100
25	F100153	FTCOP125100H	100
32	F100154	FTCOP132100H	100
40	F100155	FTCOP140100H	100

FTCOP Electronic Combined RCBO/MCB Device , 10 kA 1 Pole 240V, 300mA

Rating	Ref. NO.	1 Pole	Sensitivity
6	F103124	FTCOP106300H	300
10	F100156	FTCOP110300H	300
16	F100157	FTCOP116300H	300
20	F100158	FTCOP120300H	300
25	F100159	FTCOP125300H	300
32	F100160	FTCOP132300H	300
40	F100161	FTCOP140300H	300

①Available in 10mA

FTCOP Electronic Combined RCBO/MCB Device ,10 kA 1 Pole 110V, 30 mA

Rating	Ref. NO.	1 Pole	Sensitivity
10	F100162	FTCOP11030H	30
16	F100163	FTCOP11630H	30
20	F100164	FTCOP12030H	30
25	F100165	FTCOP12530H	30
32	F100166	FTCOP13230H	30
40	F100167	FTCOP14030H	30

FTCOP Electronic Combined RCBO/MCB Device ,10 kA 1 Pole 110V, 100 mA

Rating	Ref.NO.	1 Pole	Sensitivity
10	F100168	FTCOP110100H	100
16	F100169	FTCOP116100H	100
20	F100170	FTCOP120100H	100
25	F100171	FTCOP125100H	100
32	F100172	FTCOP132100H	100
40	F100173	FTCOP140100H	100

FTCOP Electronic Combined RCBO/MCB Device ,10 kA 1 Pole 110V, 300 mA

Rating	Ref.NO.	1 Pole	Sensitivity
10	F100174	FTCOP110300H	300
16	F100175	FTCOP116300H	300
20	F100176	FTCOP120300H	300
25	F100177	FTCOP125300H	300
32	F100178	FTCOP132300H	300
40	F100179	FTCOP140300H	300

FTCOB Electronic Combined RCBO/MCB Device , 10 kA 1 Pole 240V, 30 mA

Rating	Ref.NO.	1 Pole	Sensitivity
10	F100180	FTCOB11030H	30
16	F100181	FTCOB11630H	30
20	F100182	FTCOB12030H	30
25	F100183	FTCOB12530H	30
32	F100184	FTCOB13230H	30
40	F100185	FTCOB14030H	30

FTCOB Electronic Combined RCBO/MCB Device , 10 kA 1 Pole 240V, 100 mA

Rating	Ref.NO.	1 Pole	Sensitivity
10	F100186	FTCOB110100H	100
16	F100187	FTCOB116100H	100
20	F100188	FTCOB120100H	100
25	F100189	FTCOB125100H	100
32	F100190	FTCOB132100H	100
40	F100191	FTCOB140100H	100

F.T.M.C.TYPE FTCOB, FTCOC

FTCOB Electronic Combined RCBO/MCB Device ,10 kA 1 Pole 240V, 300 mA

Rating	Ref. NO.	1 Pole	Sensitivity
10	F100192	FTCOB110300H	300
16	F100193	FTCOB116300H	300
20	F100194	FTCOB120300H	300
25	F100195	FTCOB125300H	300
32	F100196	FTCOB132300H	300
40	F100197	FTCOB140300H	300

FTCOB Electronic Combined RCBO/MCB Device ,10 kA 1 Pole 110V, 30 mA

Rating	Ref. NO.	1 Pole	Sensitivity
10	F100198	FTCOB11030 H	30
16	F100199	FTCOB11630 H	30
20	F100200	FTCOB12030 H	30
25	F100201	FTCOB12530 H	30
32	F100202	FTCOB13230 H	30
40	F100203	FTCOB14030 H	30

FTCOB Electronic Combined RCBO/MCB Device ,10 kA 1 Pole 110V, 100 mA

Rating	Ref. NO.	1 Pole	Sensitivity
10	F100204	FTCOB110100 H	100
16	F100205	FTCOB116100 H	100
20	F100206	FTCOB120100 H	100
25	F100207	FTCOB125100 H	100
32	F100208	FTCOB132100 H	100
40	F100209	FTCOB140100 H	100

FTCOB Electronic Combined RCBO/MCB Device ,10 kA 1 Pole 110V, 300 mA

Rating	Ref. NO.	1 Pole	Sensitivity
10	F100210	FTCOB110300 H	300
16	F100211	FTCOB116300 H	300
20	F100212	FTCOB120300 H	300
25	F100213	FTCOB125300 H	300
32	F100214	FTCOB132300 H	300
40	F100215	FTCOB140300 H	300

FTCOC Electronic Combined RCBO/MCB Device ,10 kA 1 Pole 240V, 30 mA

Rating	Ref. NO.	1 Pole	Sensitivity
10	F100216	FTCOC11030 H	30
16	F100217	FTCOC11630 H	30
20	F100218	FTCOC12030 H	30
25	F100219	FTCOC12530 H	30
32	F100220	FTCOC13230 H	30
40	F100221	FTCOC14030 H	30

FTCOC Electronic Combined RCBO/MCB Device , 10 kA 1 Pole 240V, 100 mA

Rating	Ref. NO.	1 Pole	Sensitivity
10	F100222	FTCOC110100 H	100
16	F100223	FTCOC116100 H	100
20	F100224	FTCOC120100 H	100
25	F100225	FTCOC125100 H	100
32	F100226	FTCOC132100 H	100
40	F100227	FTCOC140100 H	100

FTCOC Electronic Combined RCBO/MCB Device , 10 kA 1 Pole 240V, 300 mA

Rating	Ref. NO.	1 Pole	Sensitivity
10	F100228	FTCOC110300 H	300
16	F100229	FTCOC116300 H	300
20	F100230	FTCOC120300 H	300
25	F100231	FTCOC125300 H	300
32	F100232	FTCOC132300 H	300
40	F100233	FTCOC140300 H	300

FTCOC Electronic Combined RCBO/MCB Device , 10 kA 1 Pole 110V, 30 mA

Rating	Ref. NO.	1 Pole	Sensitivity
10	F100234	FTCOC11030 H	30
16	F100235	FTCOC11630 H	30
20	F100236	FTCOC12030 H	30
25	F100237	FTCOC12530 H	30
32	F100238	FTCOC13230 H	30
40	F100239	FTCOC14030 H	30

FTCOC Electronic Combined RCBO/MCB Device , 10 kA 1 Pole 110V, 100 mA

Rating	Ref. NO.	1 Pole	Sensitivity
10	F100240	FTCOC110100 H	100
16	F100241	FTCOC116100 H	100
20	F100242	FTCOC120100 H	100
25	F100243	FTCOC125100 H	100
32	F100244	FTCOC132100 H	100
40	F100245	FTCOC140100 H	100

FTCOC Electronic Combined RCBO/MCB Device , 10 kA 1 Pole 110V, 300 mA

Rating	Ref. NO.	1 Pole	Sensitivity
10	F100246	FTCOC110300 H	300
16	F100247	FTCOC116300 H	300
20	F100248	FTCOC120300 H	300
25	F100249	FTCOC125300 H	300
32	F100250	FTCOC132300 H	300
40	F100251	FTCOC140300 H	300

F.T.M.C. TYPE FTCO for FTCP

Plug-in IEC601009 RCBO Field Fitted Residual Current Units (10 kA & 6 kA)

FTCP RCBO Field Fitted Residual current units

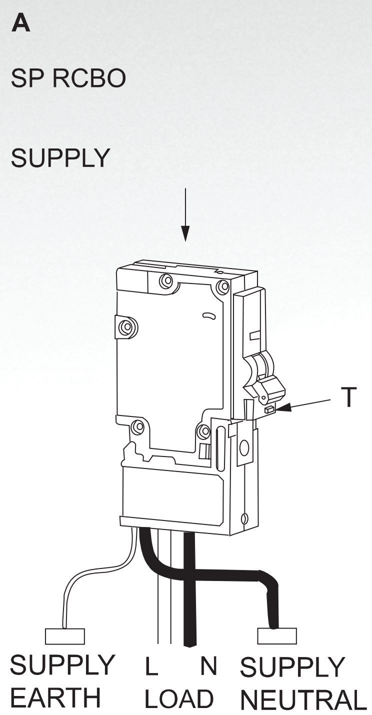
Any standard 1P+N FTMC MCB 10kA & 6kA, can be residual current unit to create an RCBO.

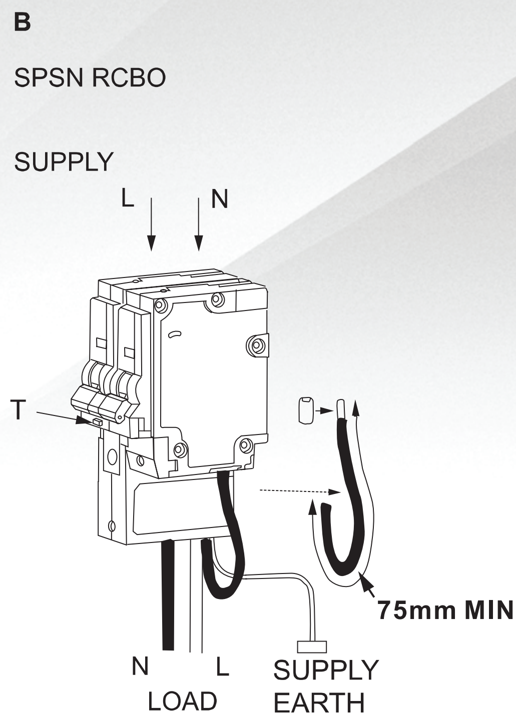
To order simply select the required sensitivity and system voltage from the table below.

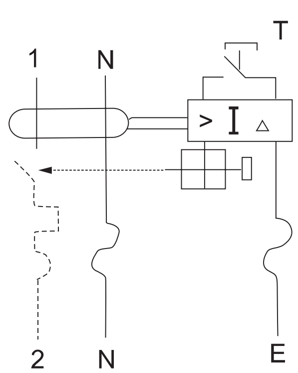
Description	Voltage	Sensitivity	Cat. #	Ref.No.
FTCO (Combined MCB/RCD) RCBO IEC601009 With Circuit Breakers 10kA & 6kA				
Field fittable RC-units	230-240 Vac	10mA	PR10	F102156
Field fittable RC-units	230-240 Vac	30mA	PR30	F102157
Field fittable RC-units	Time delayed, 230-240 Vac	100mA	PR100	F102158
Field fittable RC-units	Time delayed, 230-240 Vac	300mA	PR300	F102159

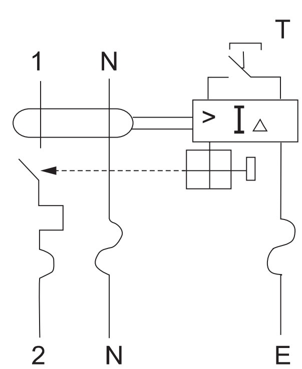
FT	C	P	1	06	R	30
FTC	Curve	Plug in	1 Pole	AMP 06 10 16 20 25 32 40 50 63	RCBO	Sensitivity mA 10mA 30mA 100mA 300mA

Installation









Insulation test

To obtain a true reading of insulation testing (500V) with RCBO installed, disconnect the RCBO functional earth lead. (this will enable its electronic circuit to be isolated from earth), With this lead disconnected the insulation resistance can then be measured to the protected earth with the phase and neutral connected together (as per BS7671) N.B. Reconnect earth wire after test.

F.T.M.C.TYPE FTCC

Cable in / Cable out IEC60898 Circuit Breakers 10kA & 6kA (240V/415V)

FTCC Cable in / Cable out IEC60898 Circuit Breakers. 10kA

Rating	Ref.No.	1 Pole	Ref.No.	2 Pole	Ref.No.	3 Poles	Ref.No.	4 Poles
6	F100252	FTCC1006H	F100261	FTCC2006H	F100270	FTCC3006H	F100279	FTCC4006H
10	F100253	FTCC1010H	F100262	FTCC2010H	F100271	FTCC3010H	F100280	FTCC4010H
16	F100254	FTCC1016H	F100263	FTCC2016H	F100272	FTCC3016H	F100281	FTCC4016H
20	F100255	FTCC1020H	F100264	FTCC2020H	F100273	FTCC3020H	F100282	FTCC4020H
25	F100256	FTCC1025H	F100265	FTCC2025H	F100274	FTCC3025H	F100283	FTCC4025H
32	F100257	FTCC1032H	F100266	FTCC2032H	F100275	FTCC3032H	F100284	FTCC4032H
40	F100258	FTCC1040H	F100267	FTCC2040H	F100276	FTCC3040H	F100285	FTCC4040H
50	F100259	FTCC1050H	F100268	FTCC2050H	F100277	FTCC3050H	F100286	FTCC4050H
63	F100260	FTCC1063H	F100269	FTCC2063H	F100278	FTCC3063H	F100287	FTCC4063H

FTCC Cable in / Cable out IEC60898 Circuit breaker. 6kA

Rating	Ref.No.	1 Pole	Ref.No.	2 Pole	Ref.No.	3 Poles	Ref.No.	4 Poles
6	F100288	FTCC1006S	F100297	FTCC2006S	F100306	FTCC3006S	F100315	FTCC4006S
10	F100289	FTCC1010S	F100298	FTCC2010S	F100307	FTCC3010S	F100316	FTCC4010S
16	F100290	FTCC1016S	F100299	FTCC2016S	F100308	FTCC3016S	F100317	FTCC4016S
20	F100291	FTCC1020S	F100300	FTCC2020S	F100309	FTCC3020S	F100318	FTCC4020S
25	F100292	FTCC1025S	F100301	FTCC2025S	F100310	FTCC3025S	F100319	FTCC4025S
32	F100293	FTCC1032S	F100302	FTCC2032S	F100311	FTCC3032S	F100320	FTCC4032S
40	F100294	FTCC1040S	F100303	FTCC2040S	F100312	FTCC3040S	F100321	FTCC4040S
50	F100295	FTCC1050S	F100304	FTCC2050S	F100313	FTCC3050S	F100322	FTCC4050S
63	F100296	FTCC1063S	F100305	FTCC2063S	F100314	FTCC3063S	F100323	FTCC4063S

F.T.M.C.TYPE FTCC

Cable in / Cable out IEC60898 Circuit Breakers 10kA & 6kA (240V/415V)

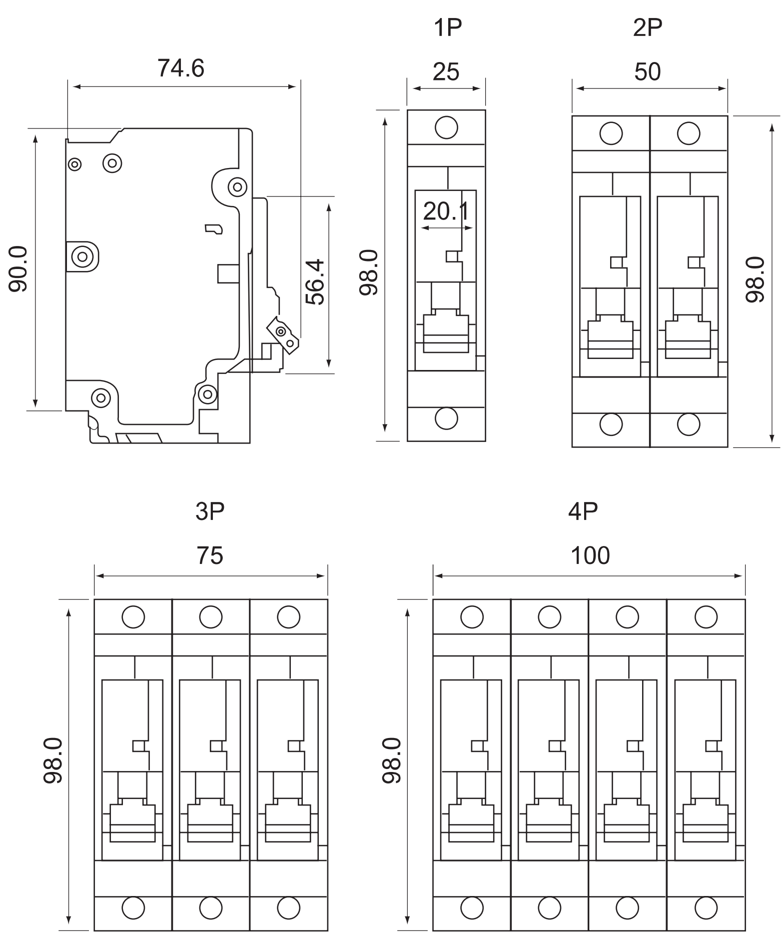
Feature

FTCC-MCBs are available with a breaking capacity of 10KA & 6kA to IEC60898 The MCB are calibrated to 40℃ MCBs can be supplied with 50℃ ambient calibration. To order insert at the end of MCB list number FTCC1006H ref.F100252.

Description

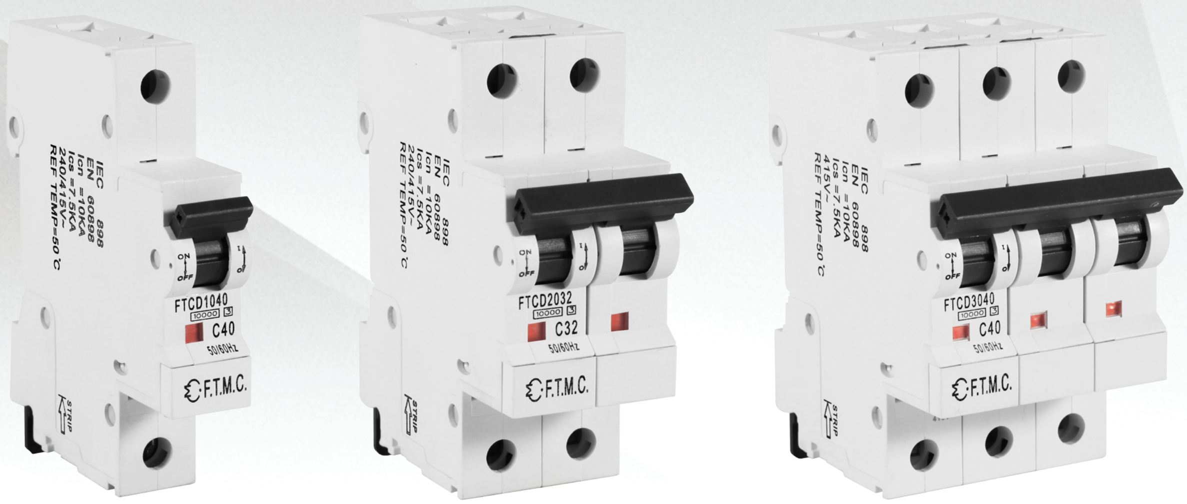
Protection and control of circuits against overloads & short circuits for domestic and industrial installations.

Dimensions



F.T.M.C.TYPE FTCD

DIN-Rail IEC60898 Circuit Breakers 10kA & 6kA (240V/415V)



FTCD Din-Rail IEC60898 Circuit Breakers. 10kA

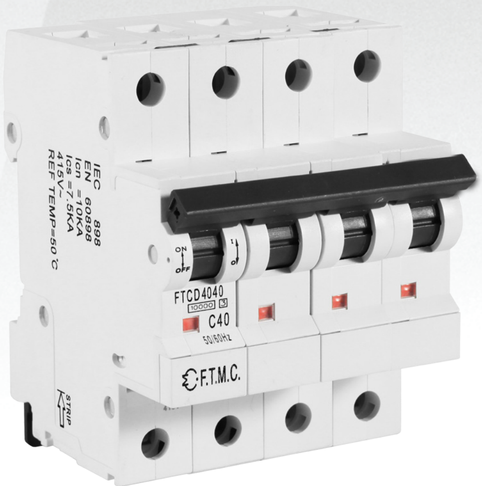
Rating	Ref.No.	1 Pole	Ref.No.	2 Pole	Ref.No.	3 Pole	Ref.No.	4 Pole
6	F100324	FTCD1006H	F100333	FTCD2006H	F100342	FTCD3006H	F100351	FTCD4006H
10	F100325	FTCD1010H	F100334	FTCD2010H	F100343	FTCD3010H	F100352	FTCD4010H
16	F100326	FTCD1016H	F100335	FTCD2016H	F100344	FTCD3016H	F100353	FTCD4016H
20	F100327	FTCD1020H	F100336	FTCD2020H	F100345	FTCD3020H	F100354	FTCD4020H
25	F100328	FTCD1025H	F100337	FTCD2025H	F100346	FTCD3025H	F100355	FTCD4025H
32	F100329	FTCD1032H	F100338	FTCD2032H	F100347	FTCD3032H	F100356	FTCD4032H
40	F100330	FTCD1040H	F100339	FTCD2040H	F100348	FTCD3040H	F100357	FTCD4040H
50	F100331	FTCD1050H	F100340	FTCD2050H	F100349	FTCD3050H	F100358	FTCD4050H
63	F100332	FTCD1063H	F100341	FTCD2063H	F100350	FTCD3063H	F100359	FTCD4063H

FTCD Din-Rail IEC60898 Circuit Breakers. 6kA

Rating	Ref.No.	1 Pole	Ref.No.	2 Pole	Ref.No.	3 Pole	Ref.No.	4 Pole
6	F100360	FTCD1006S	F100369	FTCD2006S	F100378	FTCD3006S	F100387	FTCD4006S
10	F100361	FTCD1010S	F100370	FTCD2010S	F100379	FTCD3010S	F100388	FTCD4010S
16	F100362	FTCD1016S	F100371	FTCD2016S	F100380	FTCD3016S	F100389	FTCD4016S
20	F100363	FTCD1020S	F100372	FTCD2020S	F100381	FTCD3020S	F100390	FTCD4020S
25	F100364	FTCD1025S	F100373	FTCD2025S	F100382	FTCD3025S	F100391	FTCD4025S
32	F100365	FTCD1032S	F100374	FTCD2032S	F100383	FTCD3032S	F100392	FTCD4032S
40	F100366	FTCD1040S	F100375	FTCD2040S	F100384	FTCD3040S	F100393	FTCD4040S
50	F100367	FTCD1050S	F100376	FTCD2050S	F100385	FTCD3050S	F100394	FTCD4050S
63	F100368	FTCD1063S	F100377	FTCD2063S	F100386	FTCD3063S	F100395	FTCD4063S

F.T.M.C.TYPE FTCD

DIN-Rail IEC60898 Circuit Breakers 10kA & 6kA (240V/415V)



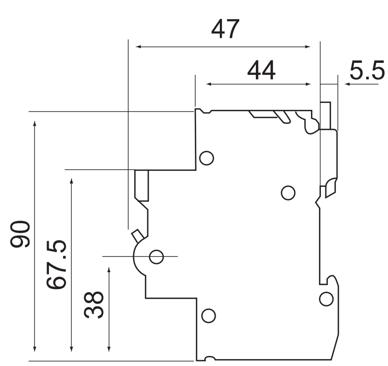
Feature

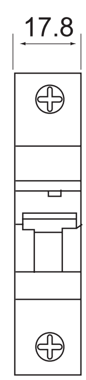
FTCD-MCBs are available with a breaking capacity of 10kA & 6kA to IEC60898 The MCB are calibrated to 40℃ MCBs can be supplied with 50℃ ambient calibration.
To order insert at the end of MCB list number:
FTCD1006H ref. F100324

Description

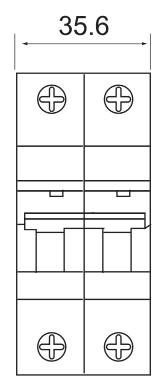
Protection and control of circuits against overloads & short circuits for domestic and industrial installations.

Dimensions

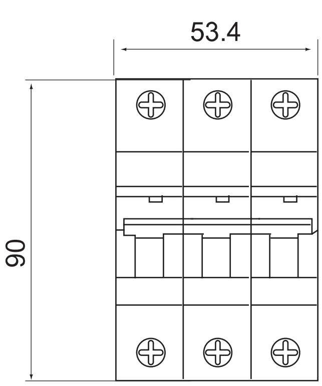




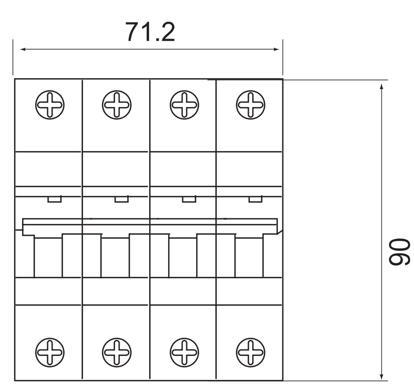
1-pole



2-pole



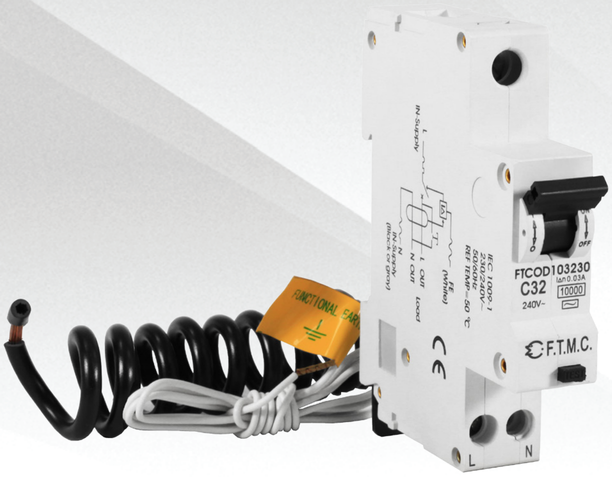
3-pole



4-pole

F.T.M.C.TYPE FTCOD

DIN-Rail RCBO IEC601009 10kA 240V



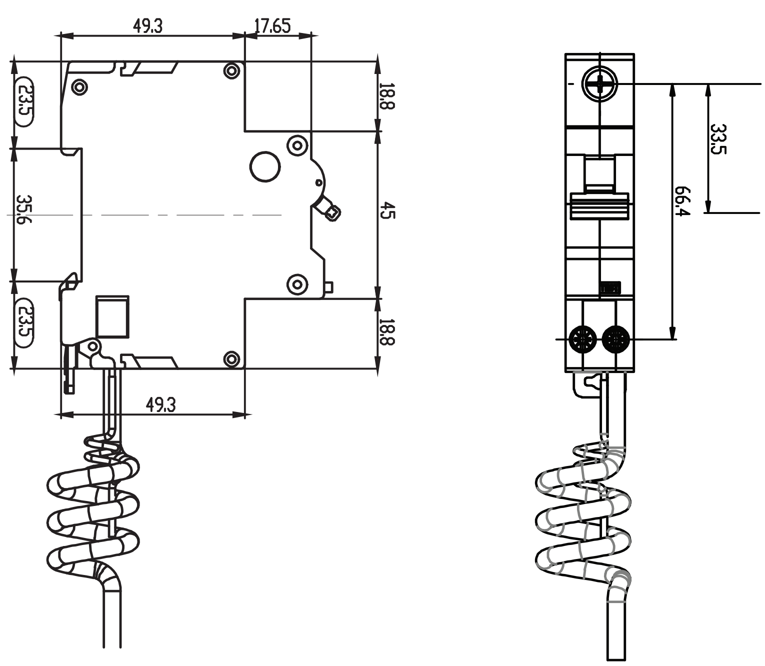
Feature

FTCOD-RCBOs are available with a breaking capacity of 10kA to IEC601009 The RCBO are calibrated to 40℃ and can be supplied with 50℃ ambient calibration.
To order insert at the end of RCBO list number:
FTCOD100610 ref. F100396

FTCOD Electronic Combined RCBO/MCB Deviced , 10 kA 1 Pole 240V sensitivity(10,30,100,300)

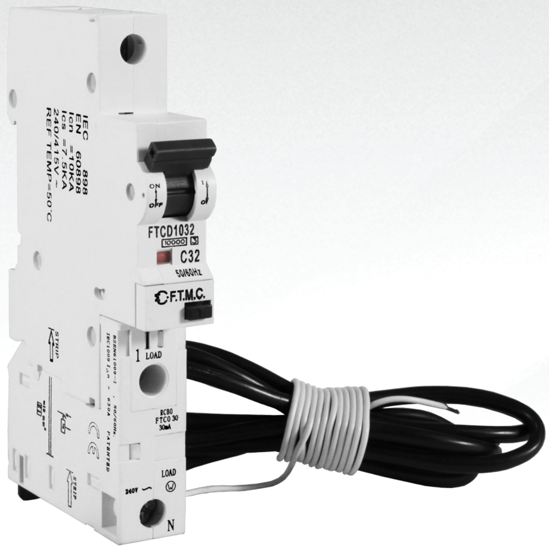
Rating	Ref.No.	1 Pole 10mA	Ref.No.	1 Pole 30mA	Ref.No.	1 Pole 100mA	Ref.No.	1 Pole 300mA
6	F100396	FTCOD100610	F100403	FTCOD100630	F100410	FTCOD1006100	F100417	FTCOD1006300
10	F100397	FTCOD101010	F100404	FTCOD101030	F100411	FTCOD1010100	F100418	FTCOD1010300
16	F100398	FTCOD101610	F100405	FTCOD101630	F100412	FTCOD1016100	F100419	FTCOD1016300
20	F100399	FTCOD102010	F100406	FTCOD102030	F100413	FTCOD1020100	F100420	FTCOD1020300
25	F100400	FTCOD102510	F100407	FTCOD102530	F100414	FTCOD1025100	F100421	FTCOD1025300
32	F100401	FTCOD103210	F100408	FTCOD103230	F100415	FTCOD1032100	F100422	FTCOD1032300
40	F100402	FTCOD104010	F100409	FTCOD104030	F100416	FTCOD1040100	F100423	FTCOD1040300

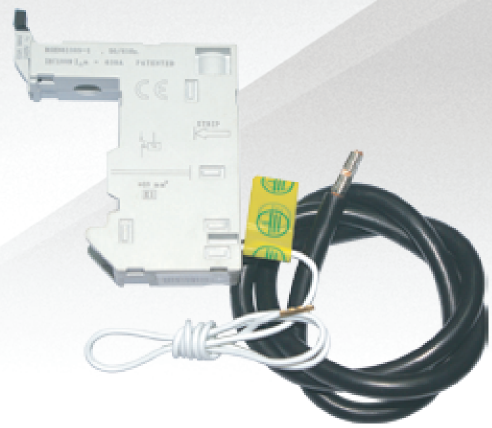
Dimensions



F.T.M.C. TYPE FTCO for FTCD

DIN-Rail RCBO IEC601009 Field Fitted Residual Current Units





RCBO Field Fitted Residual current units

Any standard 1P+N FTMC MCB 10kA & 6kA, can be fitted with residual current unit to create an RCBO.To order simply select the required sensitivity and system voltage from the table below.

Description	Voltage	Sensitivity	Cat. #	Ref.No.
FTCO (Combined MCB/RCD) RCBO IEC601009 With Circuit Breakers 10kA & 6kA				
Field fittable RC-units	230-240 Vac	10mA	DR10	F100453
Field fittable RC-units	230-240 Vac	30mA	DR30	F100454
Field fittable RC-units	Time delayed, 230-240 Vac	100mA	DR100	F100455
Field fittable RC-units	Time delayed, 230-240 Vac	300mA	DR300	F100456

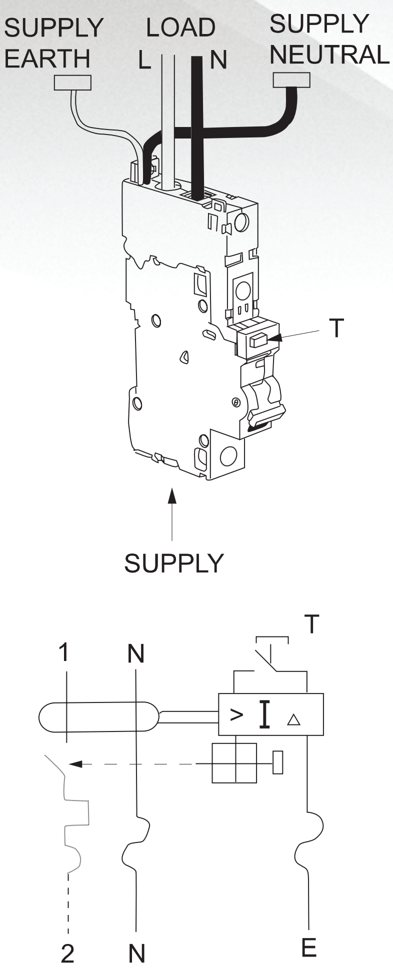
FT C D 1 06 R 30

FT	C	D	1	06	R	30
FTC	Curve	DIN	1 Pole	AMP 06 10 16 20 25 32 40 50 63	RCBO	Sensitivity mA 10mA 30mA 100mA 300mA

Installation

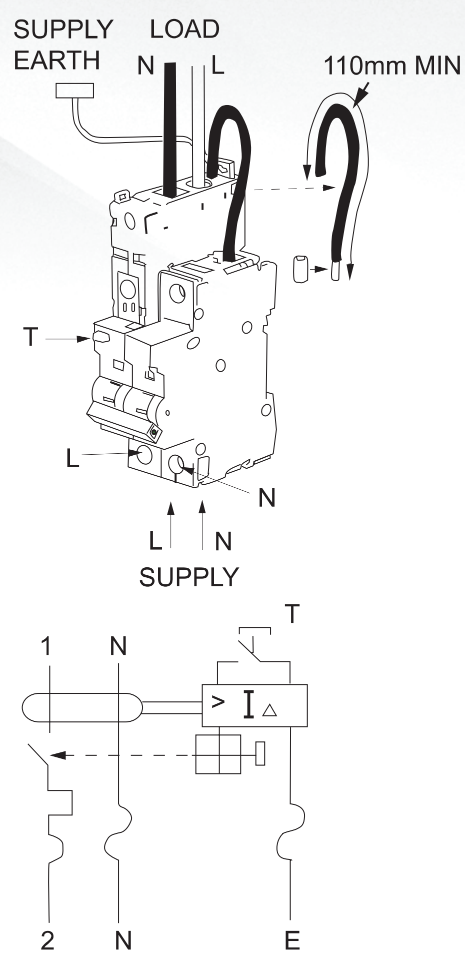
A

SP RCBO



B

SPSN RCBO

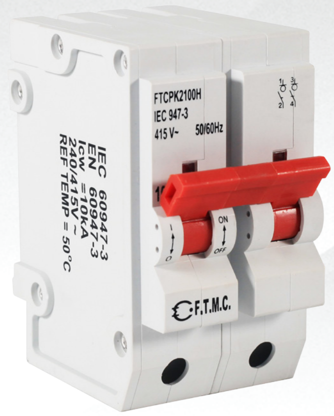


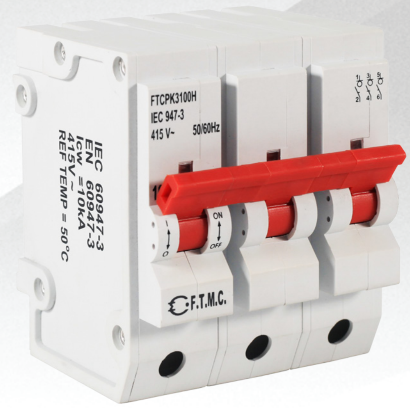
Insulation test

To obtain a true reading of insulation testing (500V) with RCBO installed, disconnect the RCBO functional earth lead. (this will enable its electronic circuit to be isolated from earth), With this lead disconnected the insulation resistance can then be measured to the protected earth with the phase and neutral connected together (as per BS7671) N.B. Reconnect earth wire after test.

F.T.M.C.TYPE FTCPK & FTCCK

Plug-in EN/IEC60947-3 Isolator Switch 10kA & 6kA (240V/415V)





Type FTCPK Plug-in EN/IEC60947-3 Isolator-40-125

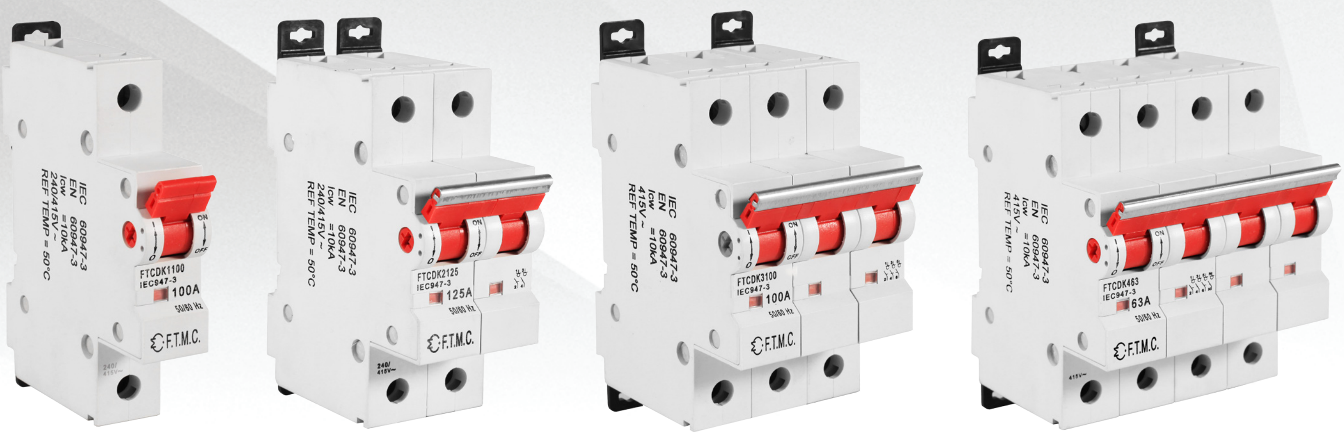
Rating	Ref.No.	1 Pole	Ref.No.	2 Pole	Ref.No.	3 Pole
40	F103395	FTCPK1040H	F100457	FTCPK2040H	F100461	FTCPK3040H
63	F103396	FTCPK1063H	F100458	FTCPK2063H	F100462	FTCPK3063H
100	F103397	FTCPK1100H	F100459	FTCPK2100H	F100463	FTCPK3100H
125	F103398	FTCPK1125H	F100460	FTCPK2125H	F100464	FTCPK3125H

FTCCK Cable in / Cable out EN/IEC60947-3 Isolator - 40-125

Rating	Ref.No.	1 Pole	Ref.No.	2 Pole	Ref.No.	3 Pole
40	F103399	FTCCK1040H	F100465	FTCCK2040H	F100469	FTCCK3040H
63	F103400	FTCCK1063H	F100466	FTCCK2063H	F100470	FTCCK3063H
100	F103401	FTCCK1100H	F100467	FTCCK2100H	F100471	FTCCK3100H
125	F103402	FTCCK1125H	F100468	FTCCK2125H	F100472	FTCCK3125H

F.T.M.C.TYPE FTCDK

DIN-Rail EN/IEC60947-3 Isolator Switch 10kA & 6kA (240V/415V)



Structure Characteristics

Two- function connected wire terminal with indicator for contact status can hand lock, lock bore diameter can 6mm

Applications

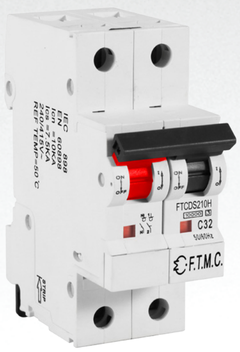
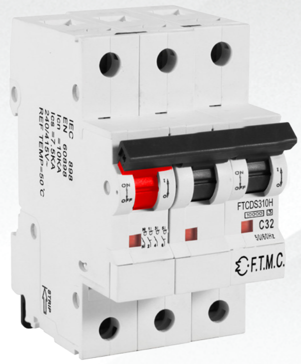
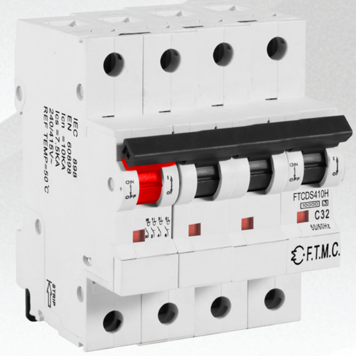
It s used for industry, Commercial and residence circuit electrical wire, used as mainly switch EN/IEC60947-3

Rating	Ref.No.	1Pole	Ref.No.	2Poles	Ref.No.	3Poles	Ref. No.	4Poles
16	F100473	FTCDK116	F100481	FTCDK216	-	-	-	-
25	F100474	FTCDK125	F100482	FTCDK225	-	-	-	-
32	F100475	FTCDK132	F100483	FTCDK232	F100489	FTCDK332	F100495	FTCDK432
40	F100476	FTCDK140	F100484	FTCDK240	F100490	FTCDK340	F100496	FTCDK440
63	F100477	FTCDK163	F100485	FTCDK263	F100491	FTCDK363	F100497	FTCDK463
80	F100478	FTCDK180	F100486	FTCDK280	F100492	FTCDK380	F100498	FTCDK480
100	F100479	FTCDK1100	F100487	FTCDK2100	F100493	FTCDK3100	F100499	FTCDK4100
125	F100480	FTCDK1125	F100488	FTCDK2125	F100494	FTCDK3125	F100500	FTCDK4125

F.T.M.C.TYPE FTCDS

DIN-Rail IEC60898 Circuit Breakers 10kA & 6kA (240V/415V)

1P + Isolator, 2P + Isolator & 3P + Isolator

Type FTCDS DIN-Rail IEC60898 circuit breaker 10kA

Rating	Ref.No.	1 P + Isolator	Rating	Ref.No.	2 P + Isolator	Rating	Ref.No.	3 P + Isolator
6	F100501	FTCDS206H	6	F100510	FTCDS306H	6	F100519	FTCDS406H
10	F100502	FTCDS210H	10	F100511	FTCDS310H	10	F100520	FTCDS410H
16	F100503	FTCDS216H	16	F100512	FTCDS316H	16	F100521	FTCDS416H
20	F100504	FTCDS220H	20	F100513	FTCDS320H	20	F100522	FTCDS420H
25	F100505	FTCDS225H	25	F100514	FTCDS325H	25	F100523	FTCDS425H
32	F100506	FTCDS232H	32	F100515	FTCDS332H	32	F100524	FTCDS432H
40	F100507	FTCDS240H	40	F100516	FTCDS340H	40	F100525	FTCDS440H
50	F100508	FTCDS250H	50	F100517	FTCDS350H	50	F100526	FTCDS450H
63	F100509	FTCDS263H	63	F100518	FTCDS363H	63	F100527	FTCDS463H

Type FTCDS DIN-Rail IEC60898 circuit breaker 6kA

Rating	Ref.No.	1 P + Isolator	Rating	Ref.No.	2 P + Isolator	Rating	Ref.No.	3 P + Isolator
6	F100528	FTCDS206S	6	F100537	FTCDS306S	6	F100546	FTCDS406S
10	F100529	FTCDS210S	10	F100538	FTCDS310S	10	F100547	FTCDS410S
16	F100530	FTCDS216S	16	F100539	FTCDS316S	16	F100548	FTCDS416S
20	F100531	FTCDS220S	20	F100540	FTCDS320S	20	F100549	FTCDS420S
25	F100532	FTCDS225S	25	F100541	FTCDS325S	25	F100550	FTCDS425S
32	F100533	FTCDS232S	32	F100542	FTCDS332S	32	F100551	FTCDS432S
40	F100534	FTCDS240S	40	F100543	FTCDS340S	40	F100552	FTCDS440S
50	F100535	FTCDS250S	50	F100544	FTCDS350S	50	F100553	FTCDS450S
63	F100536	FTCDS263S	63	F100545	FTCDS363S	63	F100554	FTCDS463S

F.T.M.C.TYPE FTCR

Residual Current Circuit Breaker IEC61008 (RCCB)

FTCR are available with ratings up to 100A and sensitivities 30mA, 100mA & 300mA time delayed. accordance with IEC61008. cable size up to 50mm^2. The FTCR devices will trip to a central position under earth fault condition, Positive contact indicators by flag- Green Open, Redclosed, indication of trip by separate oval indicator - Yellow, Voltage 240/415V, Frequency 50/60Hz, connection by cable or busbar, IP rating is IP20, Mounting is Din rail 35 mm.

Type FTCR IEC61008 Residual Current Circuit Breakers 30mA.

Rating	Ref.No.	2 Pole	Ref.No.	4 Pole	Sensitivity
25	F100555	FTCR22530	F100560	FTCR42530	30
40	F100556	FTCR24030	F100561	FTCR44030	30
63	F100557	FTCR26330	F100562	FTCR46330	30
80	F100558	FTCR28030	F100563	FTCR48030	30
100	F100559	FTCR210030	F100564	FTCR410030	30

Type FTCR IEC61008 Residual Current Circuit Breakers 100mA.

Rating	Ref.No.	2 Pole	Ref.No.	4 Pole	Sensitivity
25	F100565	FTCR225100	F100570	FTCR425100	100
40	F100566	FTCR240100	F100571	FTCR440100	100
63	F100567	FTCR263100	F100572	FTCR463100	100
80	F100568	FTCR280100	F100573	FTCR480100	100
100	F100569	FTCR2100100	F100574	FTCR4100100	100

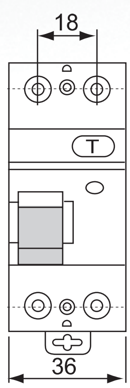
Type FTCR IEC61008 Residual Current Circuit Breakers 300mA.

Rating	Ref.No.	2 Pole	Ref.No.	4 Pole	Sensitivity
25	F100575	FTCR225300	F100580	FTCR425300	300
40	F100576	FTCR240300	F100581	FTCR440300	300
63	F100577	FTCR263300	F100582	FTCR463300	300
80	F100578	FTCR280300	F100583	FTCR480300	300
100	F100579	FTCR2100300	F100584	FTCR4100300	300

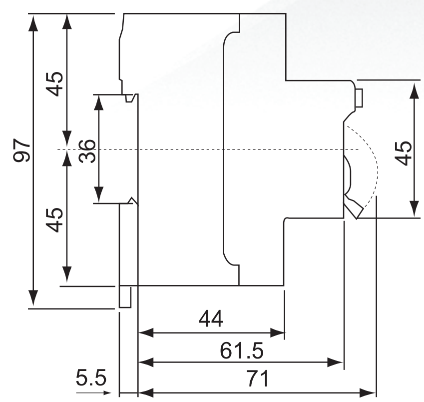
Feature

FTCR are available with ratings up to 100A and sensitivities 30mA, 100mA & 300mA time delayed. accordance with IEC61008. cable size up to 50mm² . The FTCR devices will trip to acentral position under earth fault condition , Positive contact indicators by flag- Green -Open, Red-closed, indication of trip by separate oval indicator-Yellow Vol tage 240/415V, Frequency 50/60Hz, connection by cable or busbar, IP rating is IP20, Mounting is Din rail 35mm.

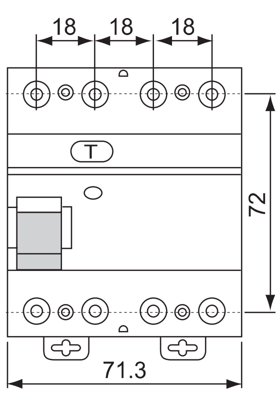
Dimensions



Front view 2-pole



Side view 2- & 4-pole



F.T.M.C.TYPE FTCNO

RCBO's Residual Current Operated Circuit Breaker IEC61009-1 with Over Current Protection

FTCNO are available with ratings up to 100A and sensitivities 30mA, 100mA & 300mA time delayed. accordance with IEC61009-1. cable size up to 50mm^2. The FTCNO devices will trip to a central position under earth fault condition, Positive contact indicators by flag- Green-Open, Red closed, indication of trip by separate oval indicator - Yellow, Voltage 240/415V, Frequency 50/60Hz, connection by cable or busbar, IP rating is IP20, Mounting is Din rail 35 mm.

FTCNO IEC61009-1 Residual Current Circuit Breakers.

Rating	Ref.No.	2 Pole	Sensitivity
16	F100585	FTCNO21610	10
20	F100586	FTCNO22010	10
25	F100587	FTCNO22510	10
32	F100588	FTCNO23210	10
40	F100589	FTCNO24010	10

Rating	Ref.No.	2 Pole	Sensitivity
16	F100590	FTCNO21630	30
20	F100591	FTCNO22030	30
25	F100592	FTCNO22530	30
32	F100593	FTCNO23230	30
40	F100594	FTCNO24030	30

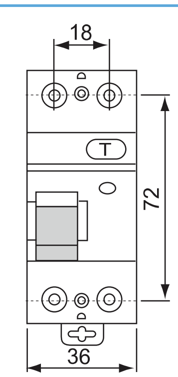
Rating	Ref.No.	2 Pole	Sensitivity
16	F100595	FTCNO216100	100
20	F100596	FTCNO220100	100
25	F100597	FTCNO225100	100
32	F100598	FTCNO232100	100
40	F100599	FTCNO240100	100

Rating	Ref.No.	2 Pole	Sensitivity
16	F100600	FTCNO216300	300
20	F100601	FTCNO220300	300
25	F100602	FTCNO225300	300
32	F100603	FTCNO232300	300
40	F100604	FTCNO240300	300

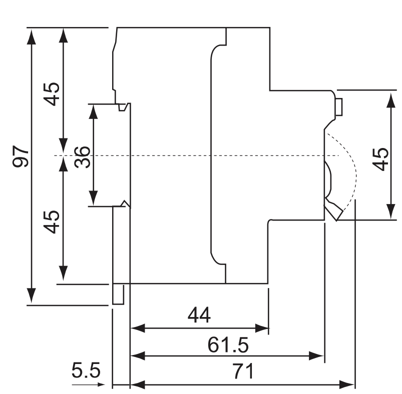
Feature

FTCNO are available with ratings up to 40 A and sensitivities 10mA, 30mA, 100mA, 300mA time delayed. accordance with IEC61009-1. cable size up to 50mm^2 . The FTCNO devices will trip to a central position under earth fault condition , Positive contact indicators by flag- Green -Open, Red-closed, indicat ion of trip by separate oval indicator-Yellow Voltage 240/ 415V, Frequency 50/ 60Hz, connection by cable or busbar, IP rating is IP20, Mounting is Din rail 35mm

Dimensions

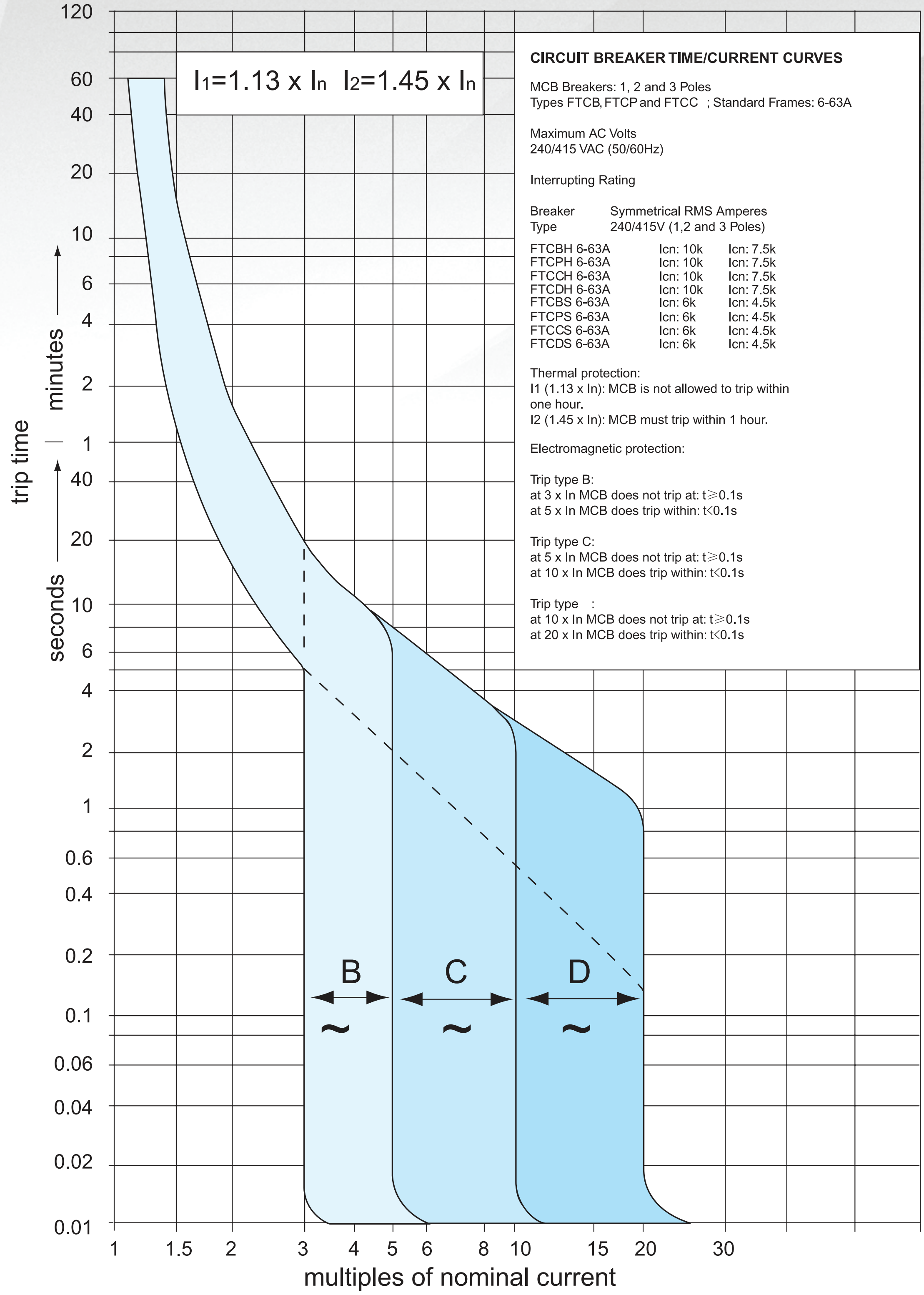


Front view 2-pole



Time Current Curve

MCB Curve



Enclosure for MCB (FTCC)

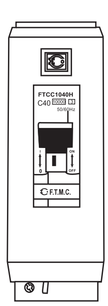
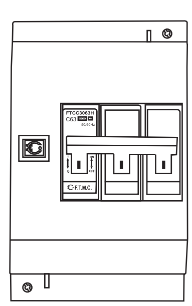
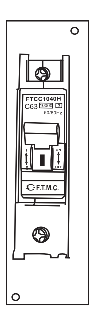
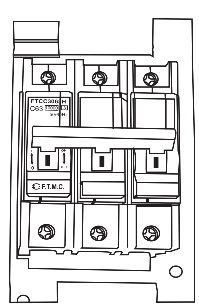
Cable in / Cable out IEC60898 Circuit Breakers 10kA 240/415V


Product Description :

Structure and features:
Distribution boxes can be with main breaker 100A and branch breaker from 6-63A, Installation and dismounting are easy

PLASTIC BOX OF FTCC Cable in / Cable out IEC60898 Circuit Breakers. 10kA 240/415V

Rating	Ref.No.	1 Pole	Ref.No.	3 Poles
6	F100605	FTCCE1006H	F100614	FTCCE3006H
10	F100606	FTCCE1010H	F100615	FTCCE3010H
16	F100607	FTCCE1016H	F100616	FTCCE3016H
20	F100608	FTCCE1020H	F100617	FTCCE3020H
25	F100609	FTCCE1025H	F100618	FTCCE3025H
32	F100610	FTCCE1032H	F100619	FTCCE3032H
40	F100611	FTCCE1040H	F100620	FTCCE3040H
50	F100612	FTCCE1050H	F100621	FTCCE3050H
63	F100613	FTCCE1063H	F100622	FTCCE3063H

Enclosure for MCB (FTCD)

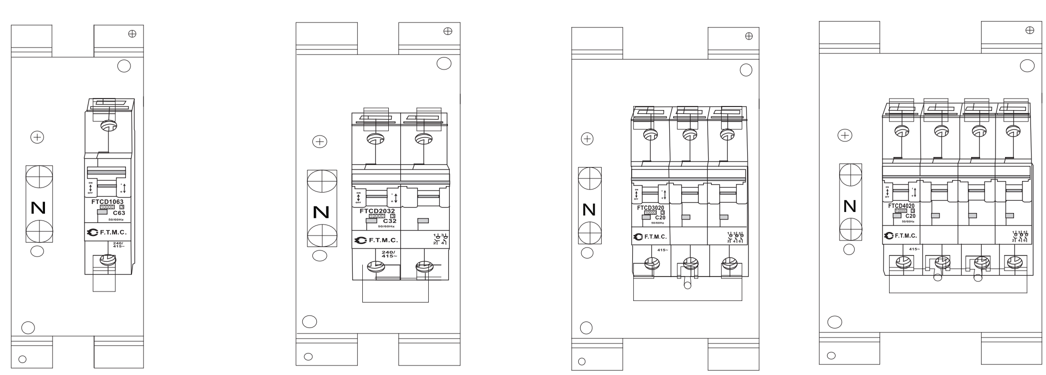
DIN-Rail IEC60898 Circuit Breakers 10kA 240/415V

Product Description :

Thermo-Magnetic Circuit Breaker with Enclosure

PLASTIC BOX OF FTCD DIN-Rail IEC60898 Circuit Breakers. 10kA 240/415V

Rating	Ref.No.	1 Pole	Ref.No.	2 Pole	Ref.No.	3 Pole	Ref.No.	4 Pole
6	F100623	FTCDE1006H	F100632	FTCDE2006H	F100641	FTCDE3006H	F100650	FTCDE4006H
10	F100624	FTCDE1010H	F100633	FTCDE2010H	F100642	FTCDE3010H	F100651	FTCDE4010H
16	F100625	FTCDE1016H	F100634	FTCDE2016H	F100643	FTCDE3016H	F100652	FTCDE4016H
20	F100626	FTCDE1020H	F100635	FTCDE2020H	F100644	FTCDE3020H	F100653	FTCDE4020H
25	F100627	FTCDE1025H	F100636	FTCDE2025H	F100645	FTCDE3025H	F100654	FTCDE4025H
32	F100628	FTCDE1032H	F100637	FTCDE2032H	F100646	FTCDE3032H	F100655	FTCDE4032H
40	F100629	FTCDE1040H	F100638	FTCDE2040H	F100647	FTCDE3040H	F100656	FTCDE4040H
50	F100630	FTCDE1050H	F100639	FTCDE2050H	F100648	FTCDE3050H	F100657	FTCDE4050H
63	F100631	FTCDE1063H	F100640	FTCDE2063H	F100649	FTCDE3063H	F100658	FTCDE4063H



Water Proof Enclosure for MCB (FTCD)

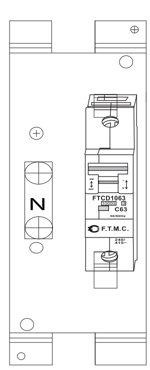
DIN-Rail IEC60898 Circuit Breakers 10kA 240/415V

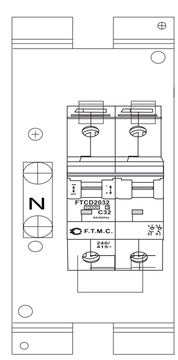
Product Description :

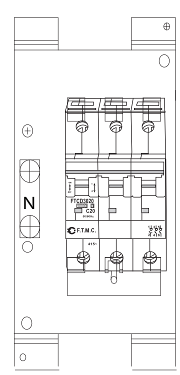
Thermo-Magnetic Circuit Breaker with Water Proof Enclosure, IP 65

PLASTIC BOX OF FTCD DIN-Rail IEC60898 Circuit Breakers. 10kA 240/415V

Rating	Ref.No.	1 Pole	Ref.No.	2 Pole	Ref.No.	3 Pole
6	F102160	FTCDEPW1006H	F102169	FTCDEPW2006H	F102178	FTCDEPW3006H
10	F102161	FTCDEPW1010H	F102170	FTCDEPW2010H	F102179	FTCDEPW3010H
16	F102162	FTCDEPW1016H	F102171	FTCDEPW2016H	F102180	FTCDEPW3016H
20	F102163	FTCDEPW1020H	F102172	FTCDEPW2020H	F102181	FTCDEPW3020H
25	F102164	FTCDEPW1025H	F102173	FTCDEPW2025H	F102182	FTCDEPW3025H
32	F102165	FTCDEPW1032H	F102174	FTCDEPW2032H	F102183	FTCDEPW3032H
40	F102166	FTCDEPW1040H	F102175	FTCDEPW2040H	F102184	FTCDEPW3040H
50	F102167	FTCDEPW1050H	F102176	FTCDEPW2050H	F102185	FTCDEPW3050H
63	F102168	FTCDEPW1063H	F102177	FTCDEPW2063H	F102186	FTCDEPW3063H



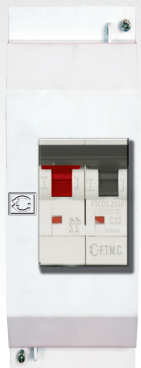
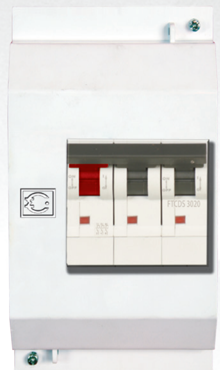
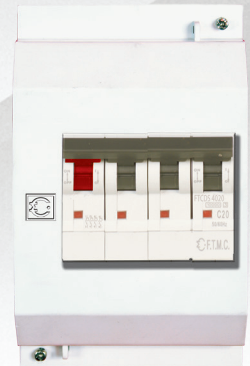




Enclosure for Miniature Circuit Breakers (FTCDS)

DIN-Rail IEC60898 Circuit Breakers 10kA 240/415V

MCB with Non protected Neutrals

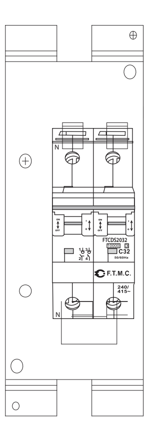
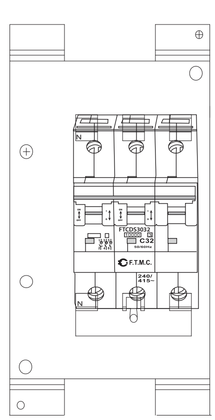
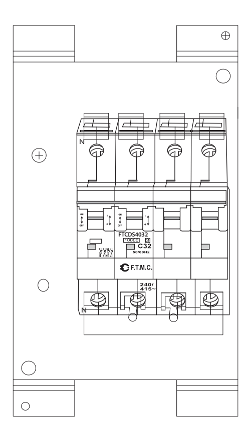




Product Description :

Thermo-Magnetic Circuit Breaker with Enclosure

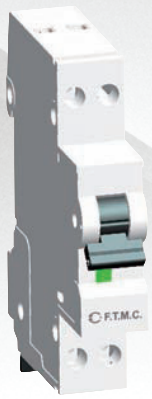
PLASTIC BOX OF FTCDS DIN-Rail IEC60898 circuit breaker 10kA 240/415V

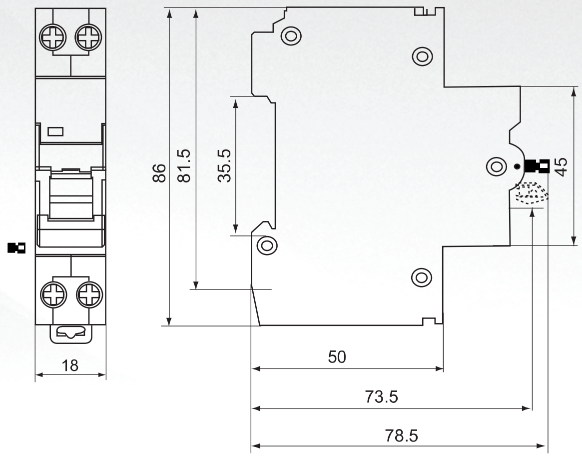
Rating	Ref.No.	1 Pole + N	Ref.No.	2 Pole + N	Ref.No.	3 Pole + N
6	F100659	FTCDSE1006H	F100668	FTCDSE2006H	F100677	FTCDSE3006H
10	F100660	FTCDSE1010H	F100669	FTCDSE2010H	F100678	FTCDSE3010H
16	F100661	FTCDSE1016H	F100670	FTCDSE2016H	F100679	FTCDSE3016H
20	F100662	FTCDSE1020H	F100671	FTCDSE2020H	F100680	FTCDSE3020H
25	F100663	FTCDSE1025H	F100672	FTCDSE2025H	F100681	FTCDSE3025H
32	F100664	FTCDSE1032H	F100673	FTCDSE2032H	F100682	FTCDSE3032H
40	F100665	FTCDSE1040H	F100674	FTCDSE2040H	F100683	FTCDSE3040H
50	F100666	FTCDSE1050H	F100675	FTCDSE2050H	F100684	FTCDSE3050H
63	F100667	FTCDSE1063H	F100676	FTCDSE2063H	F100685	FTCDSE3063H

F.T.M.C.Type DPN

Mini Circuit Breaker (1P+N)





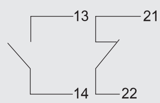
Applications

- The state -of-the-art design
- Elegant appearance; cover and handle in arc shape make comfortable operation.
- Contact position indicating window
- Transparent cover designed to carry label
- Handle central-staying function for circuit fault indicating
- In case of overload to protected circuit, MCB handle trips and stays at central position, which enables a quick indicating to the faulty line. The handle can't stay in such position when operated manually.
- Handle padlock device
- MCB handle can be locked either at "ON" position or at "OFF" position to prevent unwanted operation of the product.

Technical characteristics

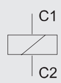
Ref. No.	F100686
Pole No.	1P + N
Rated Voltage	AC 230V
Rated current (A)	6, 10, 16, 20, 25, 32
Tripping curve	C
Rated short - Circuit capacitiy (Icn)	4.5kA
Rated service short - Circuit capacity (Ics)	4.5kA
Rated frequency	50/60Hz
Electro - mechanical endurance	4000
Contact position indication	Pillar terminal with clamp
Connection terminal	Rigid conductor up to 10mm2
Connection capacity	1.2Nm
Fastening torque	On symmetrical DIN rail 35mm
Installation	Panel mounting
terminal Connection Height	H1=19mm H2=22mm

F.T.M.C.MCB'S Accessories

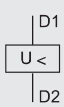
MFAU1 Ref. No. F100687

1- Auxiliary Switch 1NO + 1NC 5A- 230V~
Allows remote indication of main contact status

MFST2 Ref. No. F100688

2- Shunt trip releases
allows remote tripping operation of the coil is
indicated by a flag on the product fascia
230V-415V AC
110V-130V DC

MFUV3 Ref. No. F100689

3- Under Voltage release
allows MCB to be closed only when voltage is
above 85% of Un. MCB will automatically trip
when voltage falls to between 70-35% of Un.
operation of the coil is indicated by flag on the
product facia 230Vac, 48Vdc

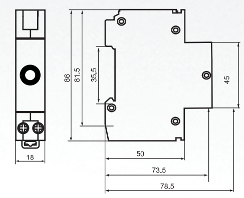
FTCBELL Ref. No. F100690

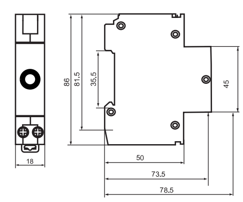
4- Alarm
Indication of wherther MCB has been turned off
or tripped

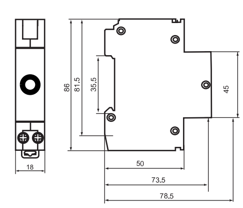
MFPL5 Ref. No. F100691

5- Padlockable
for the toggle of the device
supplied without padlock
This allows lock of the on/off position
will accept two padlocks with hasps of 4.75 mm

F.T.M.C.TYPE DIN-Rail Indicating Lamp

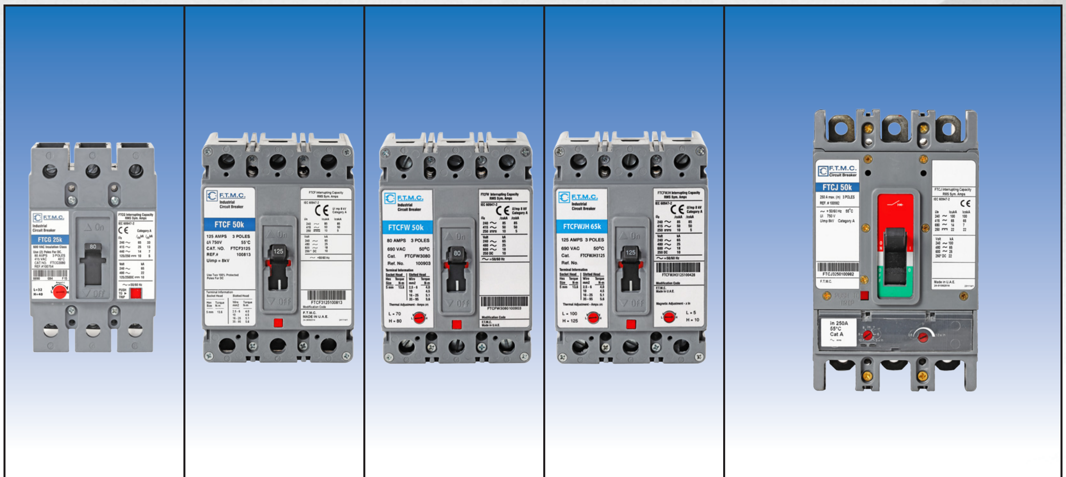
Type	Voltage	Color	Ref. #	Overall dimensions
FTCLR	31-AC220V	Red	F100692	

Type	Voltage	Color	Ref. #	Overall dimensions
FTCLY	31-AC220V	Yellow	F100693	

Type	Voltage	Color	Ref. #	Overall dimensions
FTCLB	31-AC220V	Blue	F100694	

Moulded Case Circuit Breaker

Electrical Characteristics



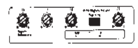
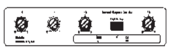
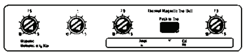
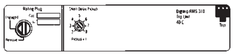
			FTCG	FTCG	FTCF	FTCFH	FTCFW	FTCFWH	FTCFWJ	FTCFWJH	FTCJ	FTCJH
			G		F						J	
Maximum Rated Current (A)			16-125A		16-225A						63-250A	
Breaker Type			FTCG	FTCG	FTCF	FTCFH	FTCFW	FTCFWH	FTCFWJ	FTCFWJH	FTCJ	FTCJH
Breaker Capacity (kA rms) AC 50-60 Hz												
IEC 947-2	220-240	I_{CU}	65	65	65	100	100	100	65	100	85	100
	VAC	I_{CS}	32	35	65	100	100	100	65	100	85	100
	380-415	ICU	25	25	50 ①	65	50 ①	65	50 ①	65	65 ①②	85
	VAC	ICS	13	13	50	65	50	65	50	65	65	85
	250	I_{CU}	10	10	10	10	10	20	10	20	10	20
	VDC	I_{CS}	5	5	5	5	5	10	5	10	5	10
Number of poles			1,2,3		1,2,3,4						2,3,4	
Ampere Range			16-125A		16-225A						63-250A	
Trip Units			Fixed Thermal Fixed Magnetic Adjustable Thermal		Fixed Thermal - Magnetic Adjustable Thermal- Magnetic Adjustable Thermal/ Fixed Magnetic						Fixed Thermal /Adjustable Magnetic Adjustable Thermal Magnetic	
Ratings	Fixed		125A		225A						250A	
	Adjustable (20%)		16-125A		16-225A						63-250A	
Calibration Temp.			55°C		55°C						55°C	
Terminations	Line		Cable		Cable						Lug & End Cap	
	Load		Cable		Cable						Cable	
	Cable Size		3-95mm²		16-150mm²						25-185mm²	
Accessories : Shunt Trip			✔		✔						✔	
Under voltage			✔		✔						✔	
Aux. Contacts			✔		✔						✔	
Trip Alarm Contacts			✔		✔						✔	

Dimensions (mm)	G H	G W	G D	F H	F W	F D	J H	J W	J D
1- Pole	123.8	25.4	66.7	152.4	35	86	x	x	x
2- Pole		50.8			70		177.8	105	104
3- Pole		76.2			105				
4- Pole	x	x	x		140			140	

① Available in 40kA Icu=Ics ② Available in 50kA Icu=Ics

Moulded Case Circuit Breaker

Electrical Characteristics

			K		LG		L		N	
										
Maximum Rated Current (A)			70- 400		250- 630		400- 800		800-1000-1250-1600	
Breaker Type			FTCK	FTCKH	FTCLG	FTCLGH	FTCL	FTCLH	FTCN	FTCNH
Breaker Capacity (kA rms) AC 50-60 Hz										
IEC 947-2	220-240	I_{CU}	85	100	85	100	85	100	85	100
	VAC	I_{CS}	85	100	85	100	85	100	85	100
	380-415	ICU	50	65	65 ②	85	65 ②	85	50	65
	VAC	ICS	50	65	65	85	65	85	50	65
	250	I_{CU}	10	20	20	20	20	20	-	-
	VDC	I_{CS}	5	10	10	10	10	10	-	-
Number of poles			2,3,4		3,4		3,4		3,4	
Ampere Range			70-400A		250-630A		400-800A		400-1600A	
Trip Units			 Adjustable Thermal Magnatic		 Adjustable Thermal Magnatic		 Adjustable Thermal Magnatic		 Adjustable Electronic	
Ratings	Fixed		400A		630A		800A		-	
	Adjustable (20%)		70-400A		250-630A		400-800A		400-1600A	
Calibration Temp.			55°C		55°C		55°C		- 5°C to + 60°C	
Terminations	Line		Lug & End Cap		Lug & End Cap		Busbar ext.		Lug / Busbar	
	Load		Cable		Cable		Busbar ext.		Lug / Busbar	
	Cable Size		35-300mm²		35-300mm²		95-500mm² (lugs)		95-500mm² (lugs)	
Accessories : Shunt Trip			✔		✔		✔		✔	
	Under voltage		✔		✔		✔		✔	
	Aux. Contacts		✔		✔		✔		✔	
	Trip Alarm Contacts		✔		✔		✔		✔	

Dimensions		K H	K W	K D	LG H	LG W	LG D	L H	L W	L D	N H	N W	N D
	1- Pole	x	x	x	x	x	x	x	x	x	x	x	x
	2- Pole	258	140	104	x	x	x	x	x	x	x	x	x
	3- Pole				258	140.0	104	400-630 = 273	210	104	406	210	140
(mm)	4- Pole		183			183		700-800A=406	280			280	

② Available in 50kA Icu=Ics

3

Moulded Case Circuit Breakers

Frame Size G (16-125) Amperes

Product description:
Maximum continuous Ampere rating at 55°C
Standard interrupting capacity catalogue number

Fixed Thermal Magnetic OR Adjustable Thermal / Fixed Magnetic

Ue Maximum	240 V /	415V
Icu	65kA	25kA
Ics	33kA	13kA

Dimensions:	H	W	D
1 Pole		25.4	
2 Pole	123.8	50.8	66.7
3 Pole		76.2	

Weight Kgs.	1 Pole	0.40
	2 Pole	0.70
	3 Pole	1.00

FTCG-Frame MCCB 25 kA

Adjustable thermal / Fixed Magnetic

1P	Ref. No.	2P	Ref. No.	3P Fixed	Ref. No.	3P adj	Ref. No.
FTCG1016	F100712	FTCG2016	F100724	FTCG3016	F100736	-	-
FTCG1020	F100713	FTCG2020	F100725	FTCG3020	F100737	FTCG3020W	F100749
FTCG1025	F100714	FTCG2025	F100726	FTCG3025	F100738	FTCG3025W	F100750
FTCG1032	F100715	FTCG2032	F100727	FTCG3032	F100739	FTCG3032W	F100751
FTCG1040	F100716	FTCG2040	F100728	FTCG3040	F100740	FTCG3040W	F100752
FTCG1050	F100717	FTCG2050	F100729	FTCG3050	F100741	FTCG3050W	F100753
FTCG1063	F100718	FTCG2063	F100730	FTCG3063	F100742	FTCG3063W	F100754
FTCG1070	F100719	FTCG2070	F100731	FTCG3070	F100743	FTCG3070W	F100755
FTCG1080	F100720	FTCG2080	F100732	FTCG3080	F100744	FTCG3080W	F100756
FTCG1090	F100721	FTCG2090	F100733	FTCG3090	F100745	FTCG3090W	F100757
FTCG1100	F100722	FTCG2100	F100734	FTCG3100	F100746	FTCG3100W	F100758
FTCG1125	F100723	FTCG2125	F100735	FTCG3125	F100747	FTCG3125W	F100759

Accessories:
Shunt Trip / 380 & 240V
Under Voltage Release 38 & 2400V
Auxiliary Contacts
Alarm Switch
Handle Mechanism

Adjustable Rating
FTCG (80-100) 3100
FTCG (63-80) 3080
FTCG (50-63) 3063
FTCG (40-50) 3050
FTCG (32-40) 3040
FTCG (25-32) 3032
FTCG (20-25) 3025
FTCG (16-20) 3020

Frame Size F (16-225) Amperes

(Fixed thermal /Fixed Magnetic)

Product description:
Maximum continuous Ampere rating at 55°C
Standard interrupting capacity catalogue number Fixed Thermal Magnetic

Ue Maximum	240 V /	415V
Icu	65kA	50kA
Ics	65kA	50kA

Dimensions:	H	W	D
1 Pole	152.4	35	86
2 Pole		70	
3 Pole		105	
4 Pole		140	

Weight Kgs.		
	1 Pole	0.80
	2 Pole	1.50
	3 Pole	2.00
	4 Pole	2.60

FTCF-Frame MCCB 50 kA①

1P	Ref. No.	2P	Ref. No.	3P	Ref. No.	4P	Ref. No.
FTCF1016	F100773	FTCF2016	F100786	FTCF3016	F100802	FTCF4016	F100818
FTCF1020	F100774	FTCF2020	F100787	FTCF3020	F100803	FTCF4020	F100819
FTCF1025	F100775	FTCF2025	F100788	FTCF3025	F100804	FTCF4025	F100820
FTCF1032	F100776	FTCF2032	F100789	FTCF3032	F100805	FTCF4032	F100821
FTCF1040	F100777	FTCF2040	F100790	FTCF3040	F100806	FTCF4040	F100822
FTCF1050	F100778	FTCF2050	F100791	FTCF3050	F100807	FTCF4050	F100823
FTCF1063	F100779	FTCF2063	F100792	FTCF3063	F100808	FTCF4063	F100824
FTCF1070	F100780	FTCF2070	F100793	FTCF3070	F100809	FTCF4070	F100825
FTCF1080	F100781	FTCF2080	F100794	FTCF3080	F100810	FTCF4080	F100826
FTCF1090	F100782	FTCF2090	F100795	FTCF3090	F100811	FTCF4090	F100827
FTCF1100	F100783	FTCF2100	F100796	FTCF3100	F100812	FTCF4100	F100828
FTCF1125	F100784	FTCF2125	F100797	FTCF3125	F100813	FTCF4125	F100829
FTCF1160	F100785	FTCF2160	F100798	FTCF3160	F100814	FTCF4160	F100830
-	-	FTCF2175	F100799	FTCF3175	F100815	FTCF4175	F100831
-	-	FTCF2200	F100800	FTCF3200	F100816	FTCF4200	F100832
-	-	FTCF2225	F100801	FTCF3225	F100817	FTCF4225	F100833

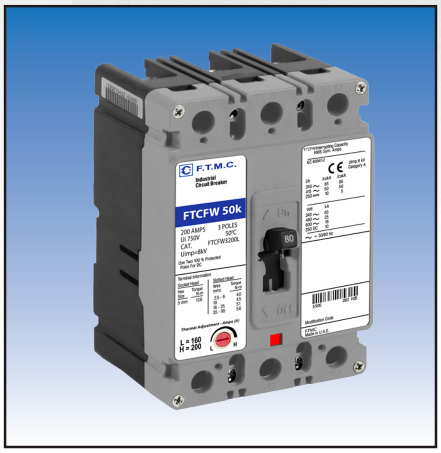
FTCFH-Frame MCCB 65 kA

1P	Ref. No.	2P	Ref. No.	3P	Ref. No.	4P	Ref. No.
FTCFH1016	F100834	FTCFH2016	F100847	FTCFH3016	F100863	FTCFH4016	F100879
FTCFH1020	F100835	FTCFH2020	F100848	FTCFH3020	F100864	FTCFH4020	F100880
FTCFH1025	F100836	FTCFH2025	F100849	FTCFH3025	F100865	FTCFH4025	F100881
FTCFH1032	F100837	FTCFH2032	F100850	FTCFH3032	F100866	FTCFH4032	F100882
FTCFH1040	F100838	FTCFH2040	F100851	FTCFH3040	F100867	FTCFH4040	F100883
FTCFH1050	F100839	FTCFH2050	F100852	FTCFH3050	F100868	FTCFH4050	F100884
FTCFH1063	F100840	FTCFH2063	F100853	FTCFH3063	F100869	FTCFH4063	F100885
FTCFH1070	F100841	FTCFH2070	F100854	FTCFH3070	F100870	FTCFH4070	F100886
FTCFH1080	F100842	FTCFH2080	F100855	FTCFH3080	F100871	FTCFH4080	F100887
FTCFH1090	F100843	FTCFH2090	F100856	FTCFH3090	F100872	FTCFH4090	F100888
FTCFH1100	F100844	FTCFH2100	F100857	FTCFH3100	F100873	FTCFH4100	F100889
FTCFH1125	F100845	FTCFH2125	F100858	FTCFH3125	F100874	FTCFH4125	F100890
FTCFH1160	F100846	FTCFH2160	F100859	FTCFH3160	F100875	FTCFH4160	F100891
-	-	FTCFH2175	F100860	FTCFH3175	F100876	FTCFH4175	F100892
-	-	FTCFH2200	F100861	FTCFH3200	F100877	FTCFH4200	F100893
-	-	FTCFH2225	F100862	FTCFH3225	F100878	FTCFH4225	F100894

①Available in 40kA Icu=Ics

Frame Size FW (16-225) Amperes

(Adjustable Thermal /Fixed Magnetic)



FTCFW - Frame MCCB 50 kA①

3P	Ref. No.	4P	Ref. No.
FTCFW3016	F100895	FTCFW4016	F100911
FTCFW3020	F100896	FTCFW4020	F100912
FTCFW3025	F100897	FTCFW4025	F100913
FTCFW3032	F100898	FTCFW4032	F100914
FTCFW3040	F100899	FTCFW4040	F100915
FTCFW3050	F100900	FTCFW4050	F100916
FTCFW3063	F100901	FTCFW4063	F100917
FTCFW3070	F100902	FTCFW4070	F100918
FTCFW3080	F100903	FTCFW4080	F100919
FTCFW3090	F100904	FTCFW4090	F100920
FTCFW3100	F100905	FTCFW4100	F100921
FTCFW3125	F100906	FTCFW4125	F100922
FTCFW3160	F100907	FTCFW4160	F100923
FTCFW3175	F100908	FTCFW4175	F100924
FTCFW3200	F100909	FTCFW4200	F100925
FTCFW3225	F100910	FTCFW4225	F100926

FTCFWH - Frame MCCB 65 kA

3P	Ref. No.	4P	Ref. No.
FTCFWH3016	F100927	FTCFWH4016	F100943
FTCFWH3020	F100928	FTCFWH4020	F100944
FTCFWH3025	F100929	FTCFWH4025	F100945
FTCFWH3032	F100930	FTCFWH4032	F100946
FTCFWH3040	F100931	FTCFWH4040	F100947
FTCFWH3050	F100932	FTCFWH4050	F100948
FTCFWH3063	F100933	FTCFWH4063	F100949
FTCFWH3070	F100934	FTCFWH4070	F100950
FTCFWH3080	F100935	FTCFWH4080	F100951
FTCFWH3090	F100936	FTCFWH4090	F100952
FTCFWH3100	F100937	FTCFWH4100	F100953
FTCFWH3125	F100938	FTCFWH4125	F100954
FTCFWH3160	F100939	FTCFWH4160	F100955
FTCFWH3175	F100940	FTCFWH4175	F100956
FTCFWH3200	F100941	FTCFWH4200	F100957
FTCFWH3225	F100942	FTCFWH4225	F100958

Accessories:
Shunt Trip / 240 & 380V
Under Voltage Release 240 & 380V
Auxiliary Contacts
Alarm Switch
Handle Mechanism
Electrical Operator / 240V

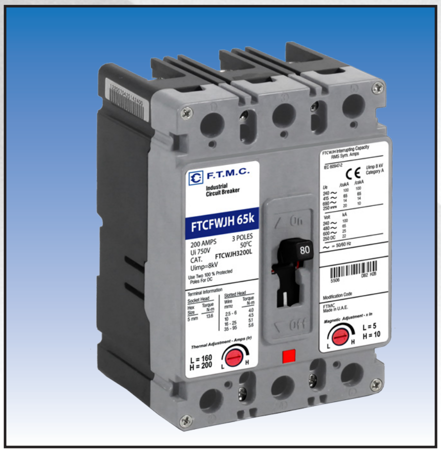
Adjustable Rating	Adjustable Rating
FTCF3225T (225-200)	FTCF3063T (63-50)
FTCF3200T (200-160)	FTCF3050T (50-40)
FTCF3160T (160-125)	FTCF3040T (40-32)
FTCF3125T (125-100)	FTCF3032T (32-25)
FTCF3100T (100-80)	FTCF3025T (25-20)
FTCF3080T (80-63)	FTCF3020T (20-16)

① Available in 40kA Icu=Ics

Frame Size FWJ (16-225) Amperes

(Adjustable Thermal / Adjustable Magnetic)

FTCFWJ - Frame MCCB 50 kA ①



3P	Ref. No.	4P	Ref. No.
FTCFWJ3016	F100760	FTCFWJ4016	F100962
FTCFWJ3020	F100761	FTCFWJ4020	F100963
FTCFWJ3025	F100762	FTCFWJ4025	F100964
FTCFWJ3032	F100763	FTCFWJ4032	F100438
FTCFWJ3040	F100764	FTCFWJ4040	F100439
FTCFWJ3050	F100765	FTCFWJ4050	F100440
FTCFWJ3063	F100766	FTCFWJ4063	F100441
FTCFWJ3070	F100767	FTCFWJ4070	F100442
FTCFWJ3080	F100768	FTCFWJ4080	F100443
FTCFWJ3090	F100769	FTCFWJ4090	F100444
FTCFWJ3100	F100770	FTCFWJ4100	F100445
FTCFWJ3125	F100771	FTCFWJ4125	F100446
FTCFWJ3160	F100772	FTCFWJ4160	F100447
FTCFWJ3175	F100959	FTCFWJ4175	F100448
FTCFWJ3200	F100960	FTCFWJ4200	F100449
FTCFWJ3225	F100961	FTCFWJ4225	F100450

FTCFWJH - Frame MCCB 65 kA

3P	Ref. No.	4P	Ref. No.
FTCFWJH3016	F100431	FTCFWJH4016	F102188
FTCFWJH3020	F100432	FTCFWJH4020	F102189
FTCFWJH3025	F100433	FTCFWJH4025	F102190
FTCFWJH3032	F100434	FTCFWJH4032	F102191
FTCFWJH3040	F100435	FTCFWJH4040	F102192
FTCFWJH3050	F100436	FTCFWJH4050	F102193
FTCFWJH3063	F100437	FTCFWJH4063	F102194
FTCFWJH3070	F100424	FTCFWJH4070	F102195
FTCFWJH3080	F100425	FTCFWJH4080	F102196
FTCFWJH3090	F100426	FTCFWJH4090	F102197
FTCFWJH3100	F100427	FTCFWJH4100	F102198
FTCFWJH3125	F100428	FTCFWJH4125	F100895
FTCFWJH3160	F100429	FTCFWJH4160	F103346
FTCFWJH3175	F100430	FTCFWJH4175	F103327
FTCFWJH3200	F100451	FTCFWJH4200	F103328
FTCFWJH3225	F102187	FTCFWJH4225	F103329

Accessories:
Shunt Trip / 240 & 380V
Under Voltage Release 240 & 380V
Auxiliary Contacts
Alarm Switch
Handle Mechanism
Electrical Operator / 240V

Adjustable Rating	Adjustable Rating
FTCF3225T (225-200)	FTCF3063T (63-50)
FTCF3200T (200-160)	FTCF3050T (50-40)
FTCF3160T (160-125)	FTCF3040T (40-32)
FTCF3125T (125-100)	FTCF3032T (32-25)
FTCF3100T (100-80)	FTCF3025T (25-20)
FTCF3080T (80-63)	FTCF3020T (20-16)

① Available in 40kA Icu=Ics

FTCA Circuit Breakers & FTCAN Moulded Case Switch

(Fixed Thermal /Fixed Magnetic)

Product description:

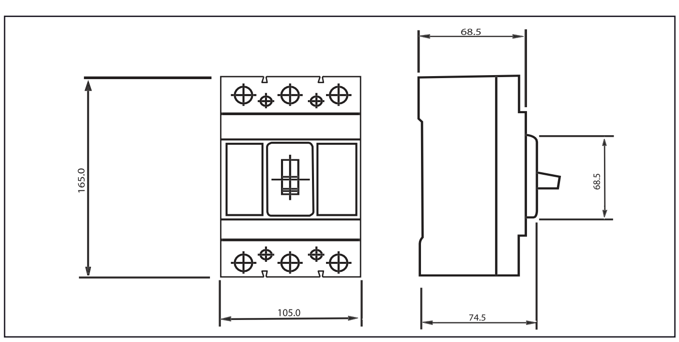
Standard	IEC60947-3
Voltage	380-415 VAC
Rating	63,80,100,125,150,175,200,225,250A
Connection type	Cable, Busbar
Cable size	70-120 mm^2
IP rating	IP20
Operation Temperature	-5°C to +60°C
Related Insulation Voltage	600Vac
Impluse Withstand Voltage (Vimp)	2500V
Mounting	Chassis
Weight unpacked	2.30 kg
Catalogue #	FTCA xxx/ FTCHA xxx, FTCHA xxxN

F TCA & FTCHA Thermal Magnetic Breakers, Non-Interchangable Trip
225 amperes, 240 Volts AC Line and Load Terminals Included

Continuous ampere Rating	22.000 Amperes I.C				44.000 Amperes I.C			
	2 Poles		3 Poles		2 Poles		3 Poles	
	Part No.	Ref.no	Part No.	Ref.no	Part No.	Ref.no	Part No.	Ref.no
Discount Symbol CB-2								
125	FTCA2125	F102240	FTCA3125	F102245	FTCHA2125	F102250	FTCHA3125	F102255
150	FTCA2150	F102241	FTCA3150	F102246	FTCHA2150	F102251	FTCHA3150	F102256
175	FTCA2175	F102242	FTCA3175	F102247	FTCHA2175	F102252	FTCHA3175	F102257
200	FTCA2200	F102243	FTCA3200	F102248	FTCHA2200	1022F53	FTCHA3200	F102258
225	FTCA2225	F102244	FTCA3225	F102249	FTCHA2225	F102254	FTCHA3225	F102259

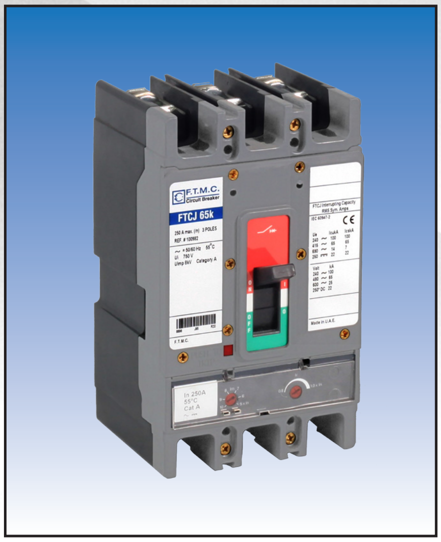
" F TCA N " & " FTCHA N " Moulded Case Switch

Continuous ampere Rating	2 Poles		3 Poles		2 Poles		3 Poles	
	Part No.	Ref.no	Part No.	Ref.no	Part No.	Ref.no	Part No.	Ref.no
Discount Symbol CB-2								
125	FTCA2125N	F102260	FTCA3125N	F102266	FTCHA2125N	F102272	FTCHA3125N	F102278
150	FTCA2150N	F102261	FTCA3150N	F102267	FTCHA2150N	F102273	FTCHA3150N	F102279
175	FTCA2175N	F102262	FTCA3175N	F102268	FTCHA2175N	F102274	FTCHA3175N	F102280
200	FTCA2200N	F102263	FTCA3200N	F102269	FTCHA2200N	F102275	FTCHA3200N	F102281
225	FTCA2225N	F102264	FTCA3225N	F102270	FTCHA2225N	F102276	FTCHA3225N	F102282
250	FTCA2250N	F102265	FTCA3250N	F102271	FTCHA3250N	F102277	FTCHA3250N	F102283



Frame Size J (125-250) Amperes

(Adjustable Thermal /Adjustable Magnetic)



Product description:
Maximum continuous Ampere rating at 55℃
Standard interrupting capacity catalogue number

Adjustable Thermal Magnetic, Changeable Trip Unit

Ue Maximum	240 V /	415V
Icu	85kA	65kA
Ics	85kA	65kA

Dimensions:	H	W	D
1 Pole	177.8	105	103
2 Pole			
3 Pole			
4 Pole		140	

Weight Kgs.		
	1 Pole	5.20
	2 Pole	5.20
	3 Pole	5.20
	4 Pole	7.00

FTCJ - Frame MCCB 65 kA①②

1P 3p Frame	Ref. No.	2P 3P Frame	Ref. No.	3P	Ref. No.	4P	Ref. No.
FTCJ1125	F100965	FTCJ2125	F100971	FTCJ3125	F100977	FTCJ4125	F100983
FTCJ1150	F100966	FTCJ2150	F100972	FTCJ3150	F100978	FTCJ4150	F100984
FTCJ1160	F100967	FTCJ2160	F100973	FTCJ3160	F100979	FTCJ4160	F100985
FTCJ1200	F100968	FTCJ2200	F100974	FTCJ3200	F100980	FTCJ4200	F100986
FTCJ1225	F100969	FTCJ2225	F100975	FTCJ3225	F100981	FTCJ4225	F100987
FTCJ1250	F100970	FTCJ2250	F100976	FTCJ3250	F100982	FTCJ4250	F100988

FTCJH - Frame MCCB 85 kA

1P 3p Frame	Ref. No.	2P 3P Frame	Ref. No.	3P	Ref. No.	4P	Ref. No.
FTCJH1125	F100989	FTCJH2125	F100995	FTCJH3125	F101001	FTCJH4125	F101007
FTCJH1150	F100990	FTCJH2150	F100996	FTCJH3150	F101002	FTCJH4150	F101008
FTCJH1160	F100991	FTCJH2160	F100997	FTCJH3160	F101003	FTCJH4160	F101009
FTCJH1200	F100992	FTCJH2200	F100998	FTCJH3200	F101004	FTCJH4200	F101010
FTCJH1225	F100993	FTCJH2225	F100999	FTCJH3225	F101005	FTCJH4225	F101011
FTCJH1250	F100994	FTCJH2250	F101000	FTCJH3250	F101006	FTCJH4250	F101012

Accessories:
Shunt Trip / 240 & 380V
Under Voltage Release 240 & 380V
Auxiliary Switch
Alarm Switch
Handle Mechanism Kit
Electrical Operator / 240V

Changeable Trip Unit	Ref. No.
FTCJ3250T (250 - 225)	F101019
FTCJ3225T (225- 200)	F101020
FTCJ3200T (200 - 160)	F101021
FTCJ3160T (160 - 150)	F101022
FTCJ3150T (150 - 125)	F101023

① Available in 40kA Icu=Ics ② Available in 50kA Icu=Ics

Frame Size K (160-400) Amperes

(Adjustable Thermal /Adjustable Magnetic)

Product description:
Maximum continuous Ampere rating at 55°C
Standard interrupting capacity catalogue number

Adjustable Thermal Magnetic, changeable trip unit

Ue Maximum	240 V /	415V
Icu	85kA	50kA
Ics	85kA	50kA

Dimensions:	H	W	D
1 Pole	258	140	104
2 Pole			
3 Pole			
4 Pole		183	

Weight Kgs.		
	1 Pole	6.10
	2 Pole	6.10
	3 Pole	6.10
	4 Pole	7.30

FTCK - Frame MCCB 50kA

1P 3p Frame	Ref. No.	2P 3P Frame	Ref. No.	3P	Ref. No.	4P	Ref. No.
FTCK1315	F101024	FTCK2315	F101026	FTCK3315	F101028	FTCK4315	F101030
FTCK1400	F101025	FTCK2400	F101027	FTCK3400	F101029	FTCK4400	F101031

FTCKH - Frame MCCB 65kA

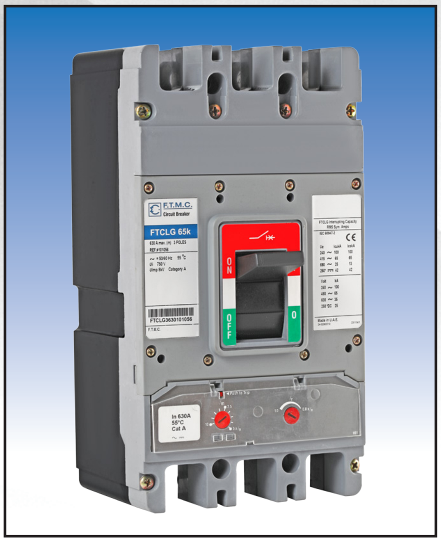
1P 3p Frame	Ref. No.	2P 3P Frame	Ref. No.	3P	Ref. No.	4P	Ref. No.
FTCKH1315	F101032	FTCKH2315	F101034	FTCKH3315	F101036	FTCKH4315	F101038
FTCKH1400	F101033	FTCKH2400	F101035	FTCKH3400	F101037	FTCKH4400	F101039

Accessories:
Shunt Trip / 240 & 380V
Under Voltage Release 240 & 380V
Auxiliary Switch
Alarm Switch
Handle Mechanism Kit
Electrical Operator / 240V
Lockable Devices

Changeable Trip Unit	Ref. No.
FTCK3400T (400 - 315)	F101047
FTCK3315T (315- 250)	F101048
FTCK3250T (250 - 160)	F101049
FTCK3160T (160 - 125)	F101050

Frame Size LG (400-630) Amperes

(Adjustable Thermal /Adjustable Magnetic)



Product description:
Maximum continuous Ampere rating at 55℃
Standard interrupting capacity catalogue number

Adjustable Thermal Magnetic, changeable trip unit

Ue Maximum	240 V /	415V
Icu	85kA	65kA
Ics	85kA	65kA

Dimensions:	H	W	D
1 Pole	258	140	104
2 Pole			
3 Pole			
4 Pole		183	

Weight Kgs.		
	1 Pole	6.10
	2 Pole	6.10
	3 Pole	6.10
	4 Pole	7.30

FTCLG - Frame MCCB 65 kA②

1P 3P Frame	Ref. No.	2P 3P Frame	Ref. No.	3P	Ref. No.	4P	Ref. No.
FTCLG1500	F101051	FTCLG2500	F101053	FTCLG3500	F101055	FTCLG4500	F101057
FTCLG1630	F101052	FTCLG2630	F101054	FTCLG3630	F101056	FTCLG4630	F101058

FTCLGH - Frame MCCB 85 kA

1P 3P Frame	Ref. No.	2P 3P Frame	Ref. No.	3P	Ref. No.	4P	Ref. No.
FTCLGH1500	F101059	FTCLGH2500	F101061	FTCLGH3500	F101063	FTCLGH4500	F101065
FTCLGH1630	F101060	FTCLGH2630	F101062	FTCLGH3630	F101064	FTCLGH4400	F101066

Accessories:
Shunt Trip / 240 & 380V
Under Voltage Release 240 & 380V
Auxiliary Switch
Alarm Switch
Handle Mechanism Kit
Electrical Operator / 240V

changeable Trip Unit	Ref. No.
FTCLG3630T (630 - 500)	F101073
FTCLG3500T (500 - 400)	F101074
FTCLG3400T (400 - 315)	F101075
FTCLG3315T (315 - 250)	F101076
FTCLG3250T (250 - 200)	F101077
FTCLG3200T (200 - 160)	F101078

② Available in 50kA Icu=Ics

Frame Size L (630-800) Amperes

(Adjustable Thermal /Adjustable Magnetic)

Product description:
Maximum continuous Ampere rating at 55℃
Standard interrupting capacity catalogue number

Adjustable Thermal Magnetic, changeable trip unit

Ue Maximum	240 V /	415V
Icu	85kA	65kA
Ics	85kA	65kA

<table>
<tr><th>Dimensions:</th><th>H</th><th>W</th><th>D</th></tr>
<tr><td>1 Pole</td><td rowspan="4">406</td><td rowspan="3">210</td><td rowspan="4">104</td></tr>
<tr><td>2 Pole</td></tr>
<tr><td>3 Pole</td></tr>
<tr><td>4 Pole</td><td>280</td></tr>
</table>

<table>
<tr><td rowspan="4">Weight Kgs.</td><td>1 Pole</td><td>11.30</td></tr>
<tr><td>2 Pole</td><td>11.30</td></tr>
<tr><td>3 Pole</td><td>11.30</td></tr>
<tr><td>4 Pole</td><td>14.40</td></tr>
</table>

FTCL - Frame MCCB 65 kA②

1P 3P Frame	Ref. No.	2P 3P Frame	Ref. No.	3P	Ref. No.	4P	Ref. No.
FTCL1630	F101079	FTCL2630	F101081	FTCL3630	F101083	FTCL4630	F101085
FTCL1800	F101080	FTCL2800	F101082	FTCL3800	F101084	FTCL4800	F101086

FTCLH - Frame MCCB 85 kA

1P 3P Frame	Ref. No.	2P 3P Frame	Ref. No.	3P	Ref. No.	4P	Ref. No.
FTCLH1630	F101087	FTCLH2630	F101089	FTCLH3630	F101091	FTCLH4630	F101093
FTCLH1800	F101088	FTCLH2800	F101090	FTCLH3800	F101092	FTCLH4800	F101094

Accessories:
Shunt Trip /240&380V
Under voltage Release 240&380V
Auxiliary Switch
Alarm Switch
Handle Mechanism Kit
Electrical operator / 240V

changeable Trip Unit	Ref. No.
FTCL3800T (800 - 700)	F101101
FTCL3700T (700 - 630)	F101102
FTCL3630T (630 - 500)	F101103
FTCL3500T (500 - 400)	F101104

② Available in 50kA Icu=Ics

Frame size N (800 -1600) Amperes

(Electronic Adjustable)

Product description:
Maximum continuous Ampere rating at -5°C to + 60°C
Standard interrupting capacity catalogue number
Adjustable Thermal Magnetic, changeable trip unit

Ue Maximum	240 V/	415V
Icu	85kA	50kA
Ics	85kA	50kA

Dimensions:	H	W	D
2 Pole	406	210	140
3 Pole		210	
4 Pole		280	

Weight Kgs.		
	2 Pole	21.3 Kg
	3 Pole	21.3 Kg
	4 Pole	28.3 Kg

FTCN-Frame MCCB 50 kA

2P 3P Frame	Ref. No.	3P Frame	Ref. No.	4P Frame	Ref. No.
FTCN2800	F102284	FTCN3800	F102288	FTCN4800	F102292
FTCN2100	F102285	FTCN3100	F102289	FTCN4100	F102293
FTCN2125	F102286	FTCN3125	F102290	FTCN4125	F102294
FTCN2160	F102287	FTCN3160	F102291	FTCN4160	F102295

FTCNH-Frame MCCB 65 kA

2P 3P Frame	Ref. No.	3P Frame	Ref. No.	4P Frame	Ref. No.
FTCNH2800	F102296	FTCNH3800	F102300	FTCNH4800	F102304
FTCNH2100	F102297	FTCNH3100	F102301	FTCNH4100	F102305
FTCNH2125	F102298	FTCNH3125	F102302	FTCNH4125	F102306
FTCNH2160	F102299	FTCNH3160	F102303	FTCNH4160	F102307

Accessories:
Shunt Trip/240&380V
Under voltage Release 240&380V
Auxiliary Switch
Alarm Switch
Handle Mechanism Kit
Electrical operator /240V

Changeable Fixed Rating plug	Ref. No.	Adjustable Rating plug	Ref. No.
700-800-1000-1250-1600	F102314	400-500-630-700-800	F102318
630-700-800-1000-1250	F102315	500-630-700-800-1000	F102319
500-630-700-800-1000	F102316	630-700-800-1000-1250	F102320
400-500-630-700-800	F102317	800-1000-1250-1600	F102321

	LS	LSI	LSG	LSIG
Short Time Range	2-8 X In	2-8 X In	2-8 X In	2-8 X In
Short time Delay	-	0-300ms	-	0-300ms
Ground Fault Pickup	-	-	200-1200A	200-1200A
Ground Fault Delay	-	-	0-500ms	0-500ms

L- Adjustable long delay pickup (by adjustable rating plug)

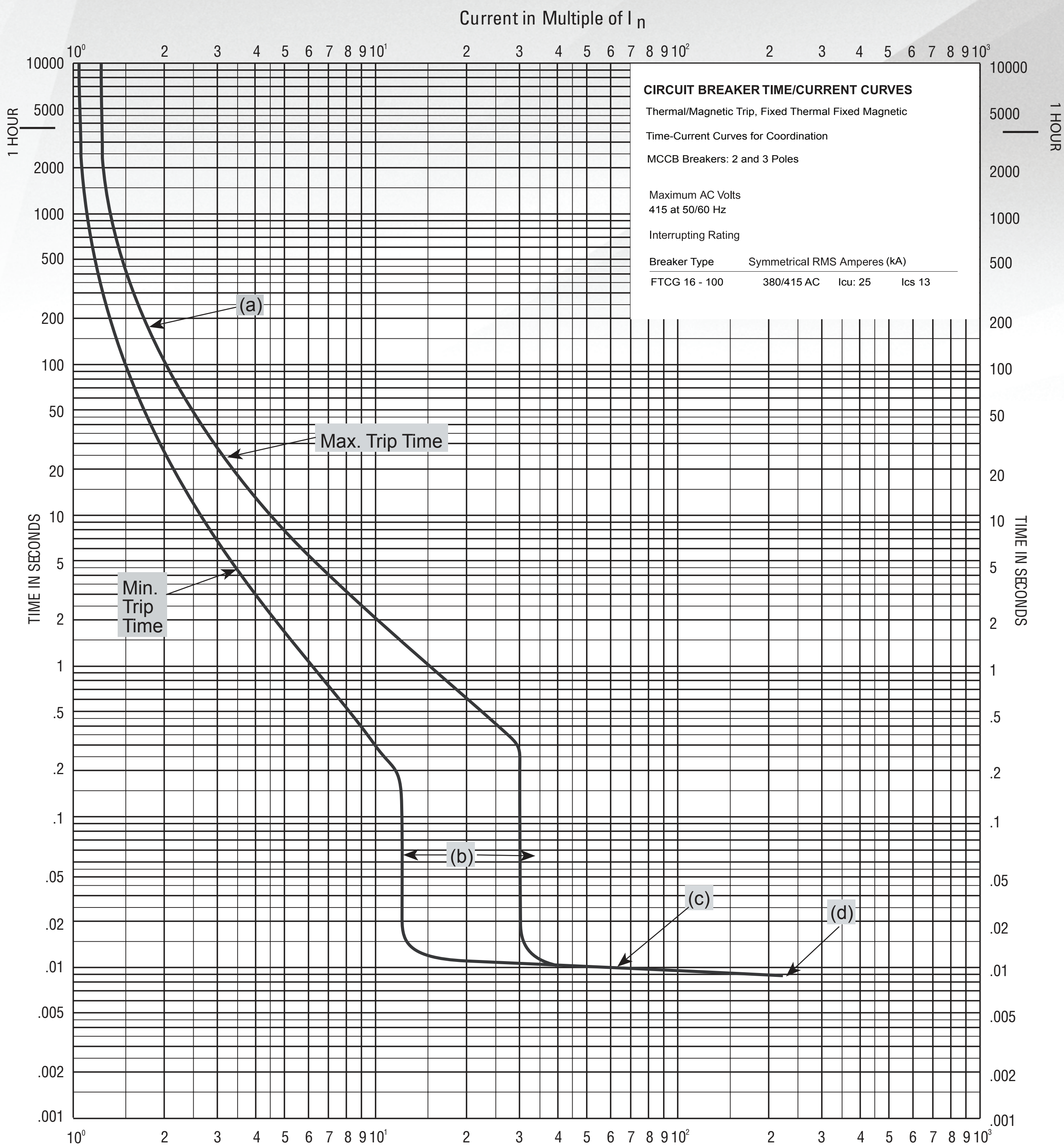
S- Adjustable short delay pickup with fixed short delay time (I2t Response) or adjustable short delay time (Flat Response)

I – Adjustable Instantaneous pickup by setting short delay time to instantaneous

G – Adjustable ground fault pickup with adjustable ground fault delay (flat response)

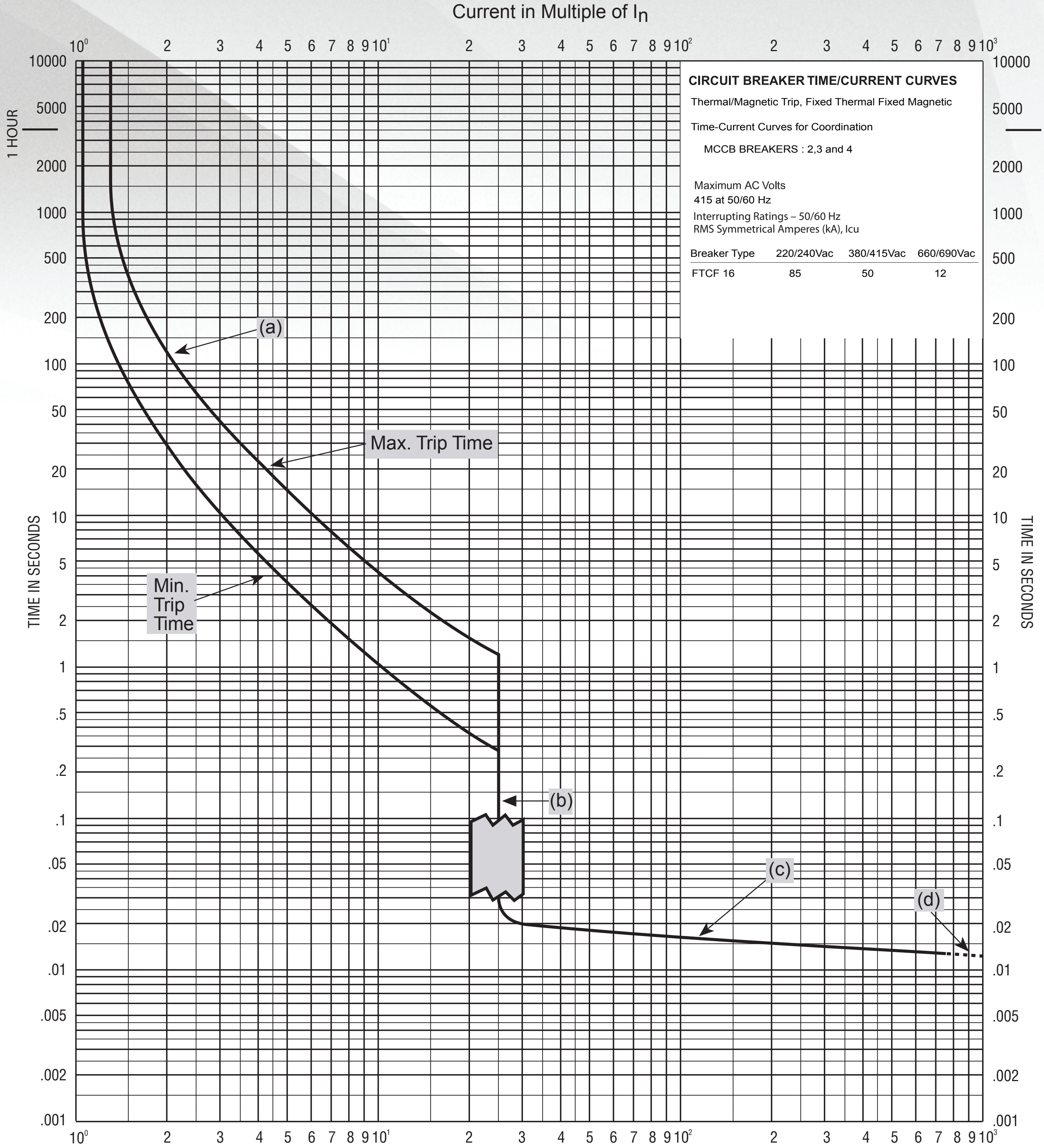
Time Current Curve

FTCG MOLDED CASE CIRCUIT BREAKERS 16-100A (55˚C)



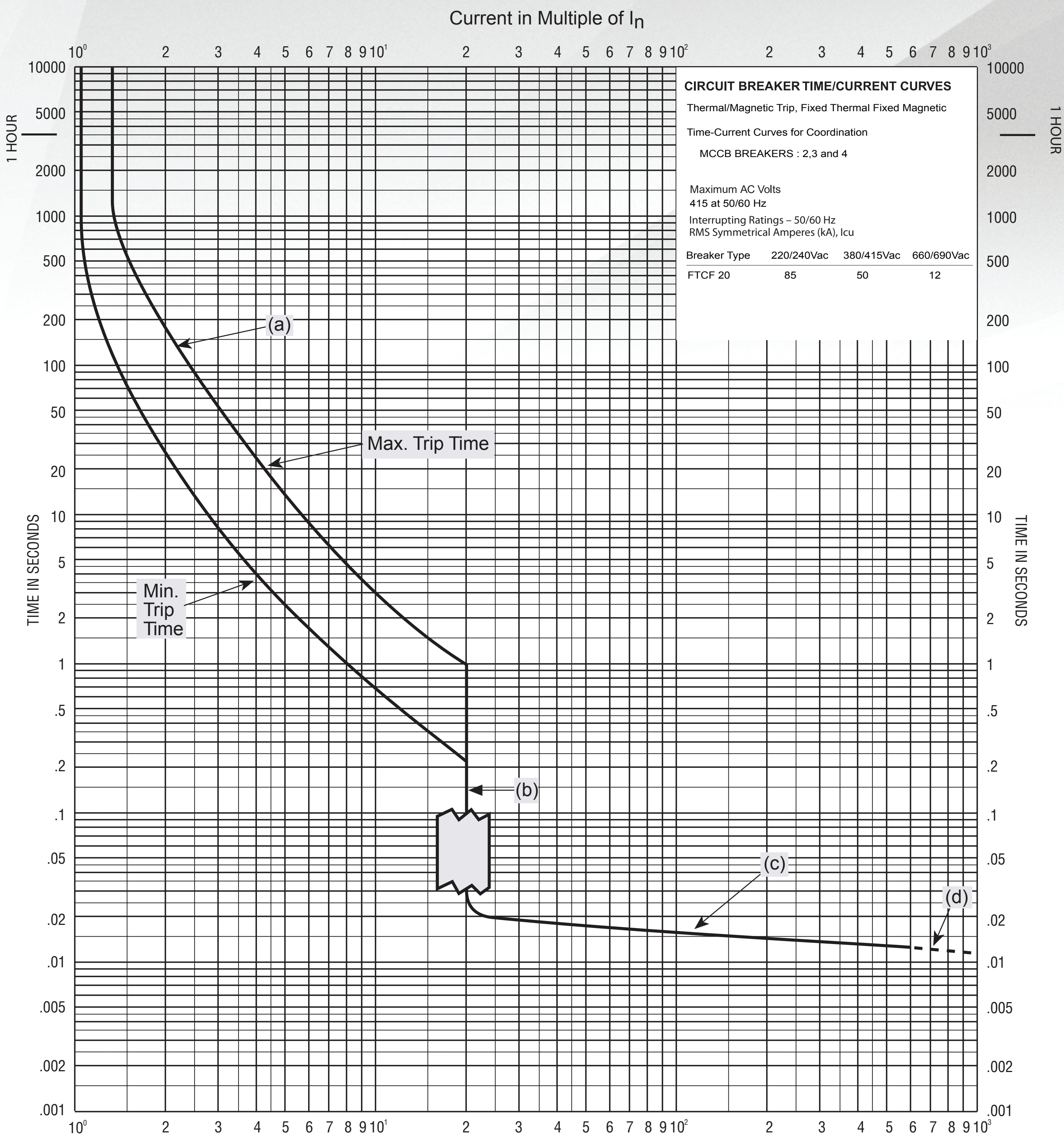
Time Current Curve

FTCF MOLDED CASE CIRCUIT BREAKERS 16A (55°C)



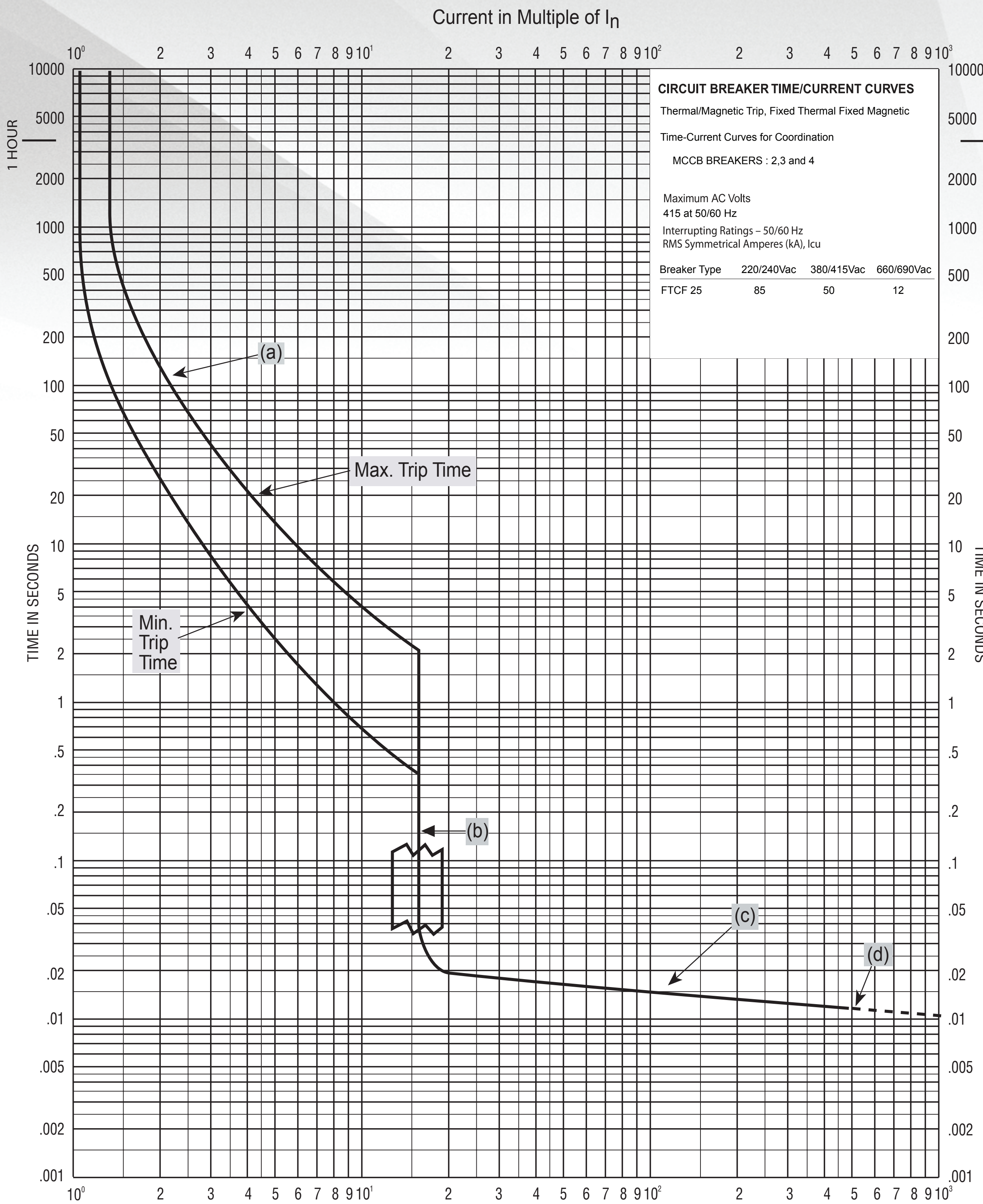
Time Current Curve

FTCF MOLDED CASE CIRCUIT BREAKERS 20A (55°C)



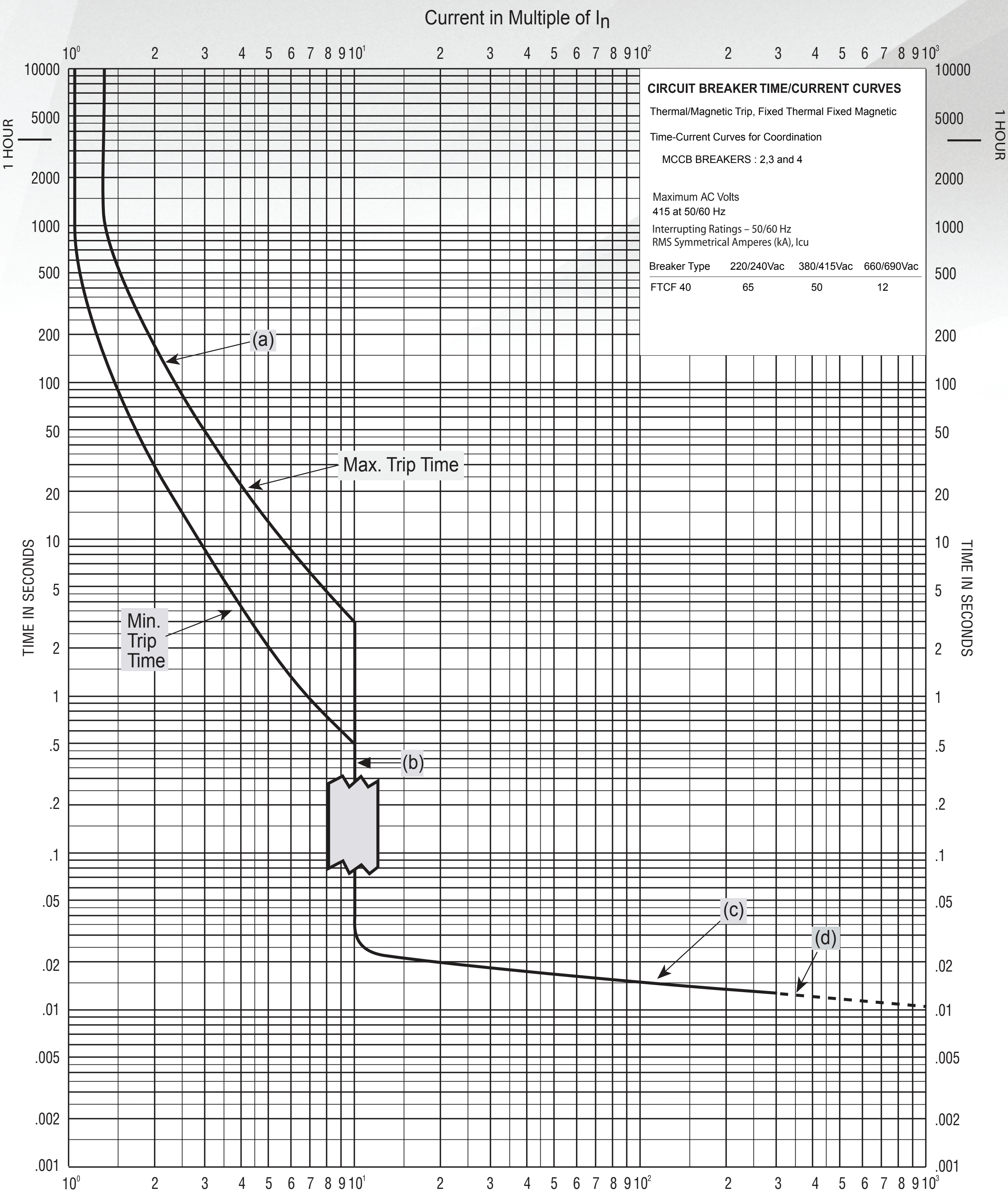
Time Current Curve

FTCF MOLDED CASE CIRCUIT BREAKERS 25A (55˚C)



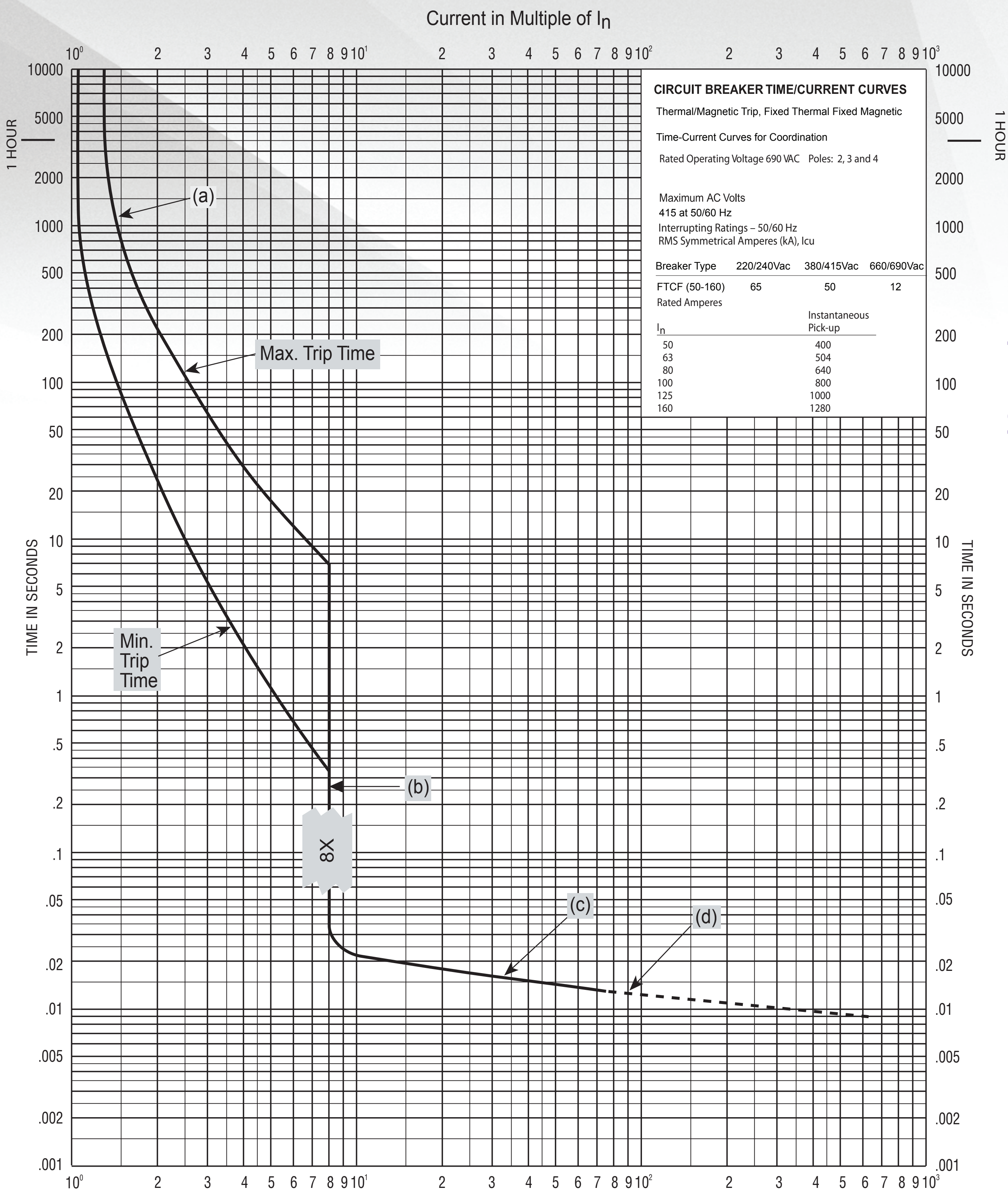
Time Current Curve

FTCF MOLDED CASE CIRCUIT BREAKERS 40A (55˚C)



Time Current Curve

FTCF MOLDED CASE CIRCUIT BREAKERS (50-160)A (55˚C)

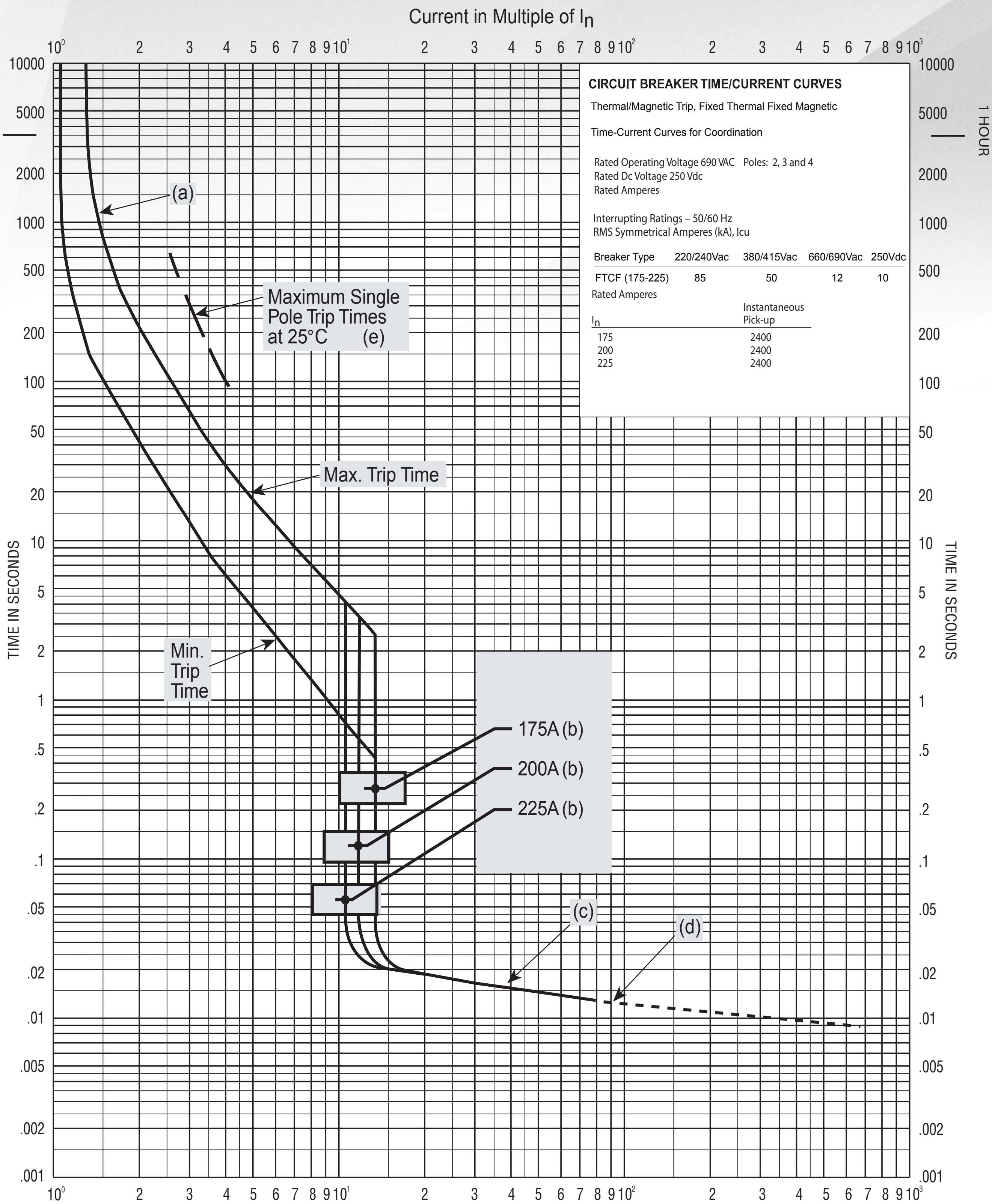


3

Moulded Case Circuit Breakers (Curve)

Time Current Curve

FTCF MOLDED CASE CIRCUIT BREAKERS (175-225)A (55˚C)



CIRCUIT BREAKER TIME/CURRENT CURVES

Thermal/Magnetic Trip, Fixed Thermal Fixed Magnetic

Time-Current Curves for Coordination

Rated Operating Voltage 690 VAC Poles: 2, 3 and 4
Rated Dc Voltage 250 Vdc
Rated Amperes

Interrupting Ratings – 50/60 Hz
RMS Symmetrical Amperes (kA), Icu

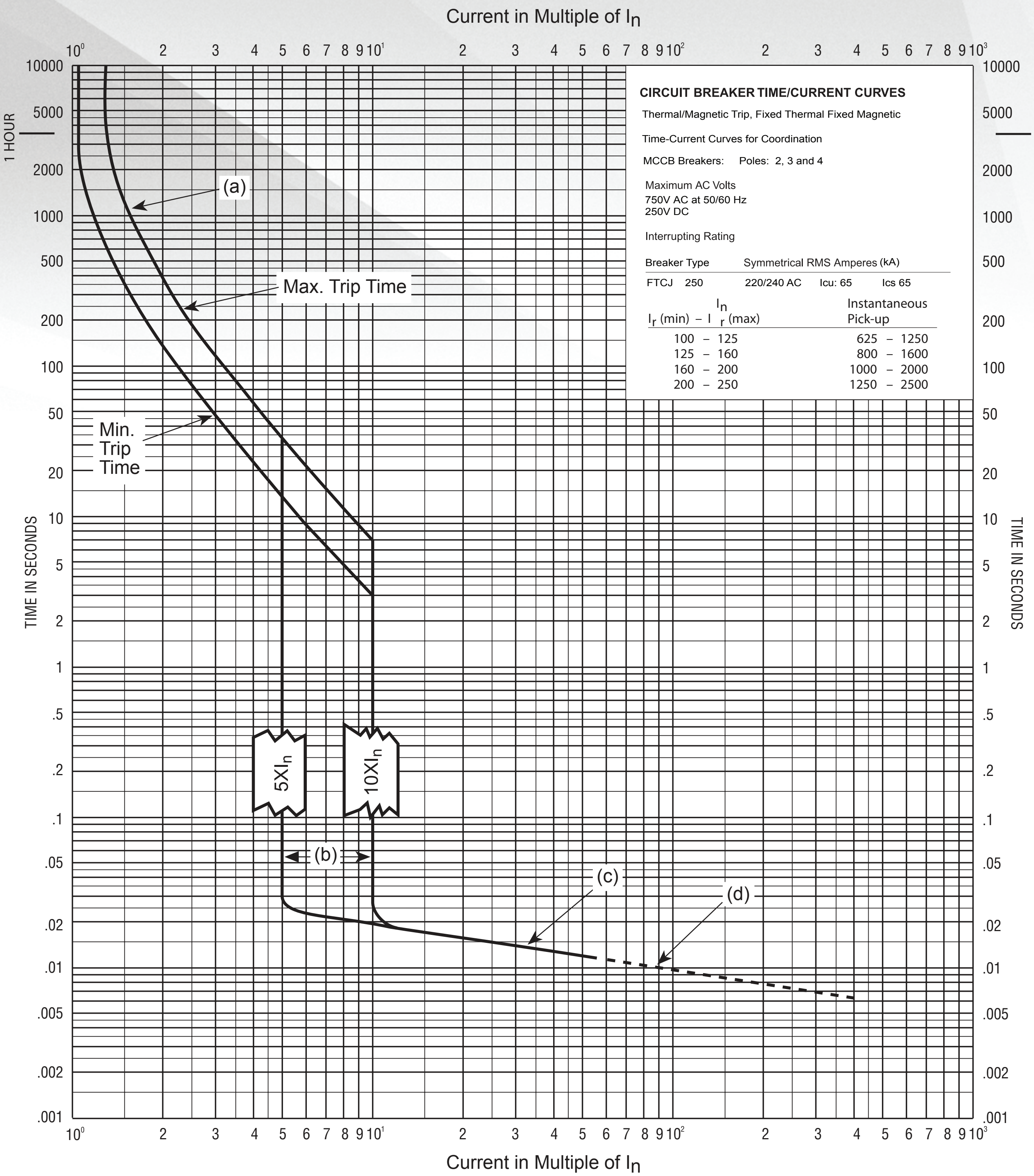
Breaker Type	220/240Vac	380/415Vac	660/690Vac	250Vdc
FTCF (175-225)	85	50	12	10

Rated Amperes

I_n	Instantaneous Pick-up
175	2400
200	2400
225	2400

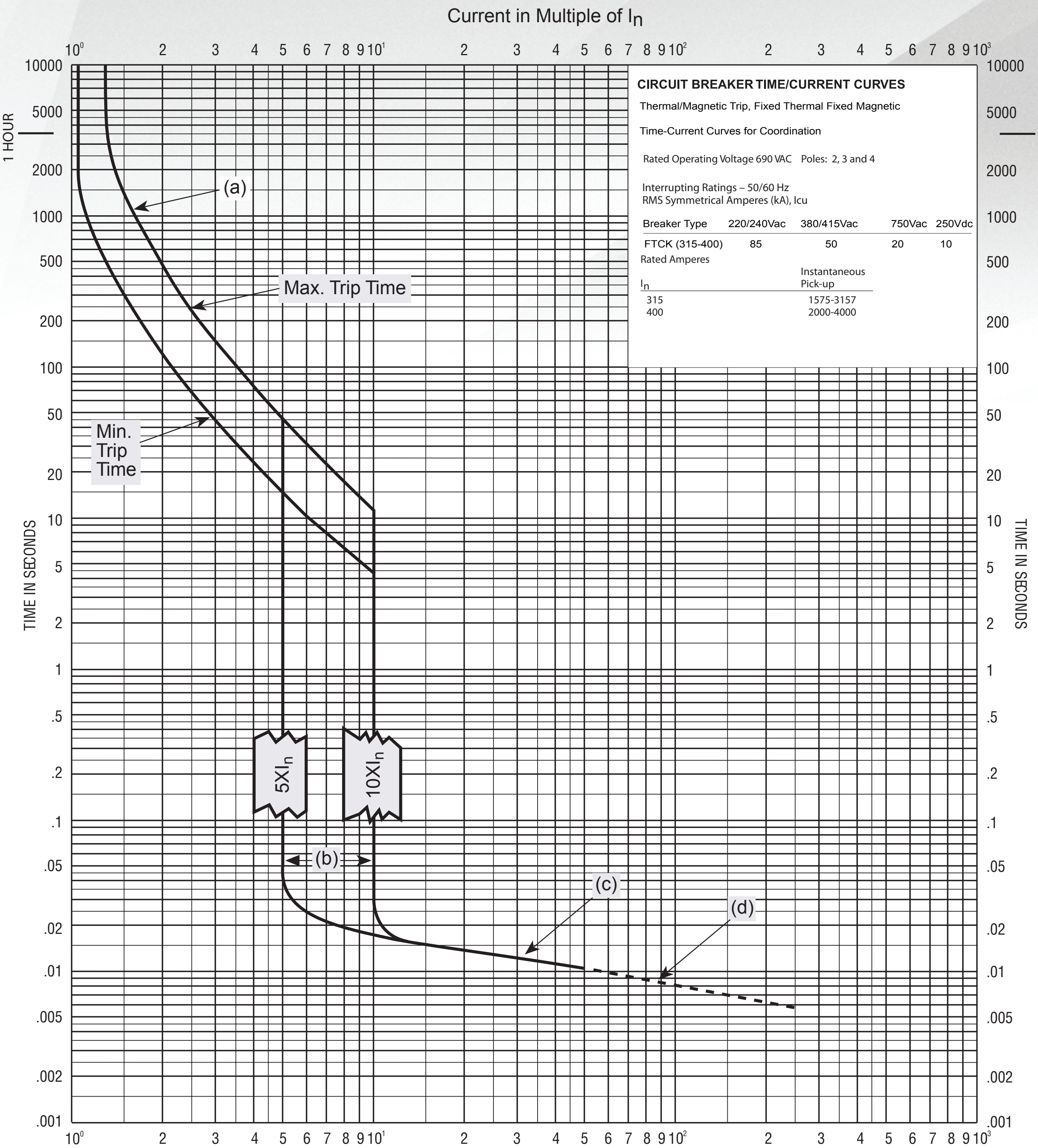
Time Current Curve

FTCJ MOLDED CASE CIRCUIT BREAKERS 250A (55˚C)



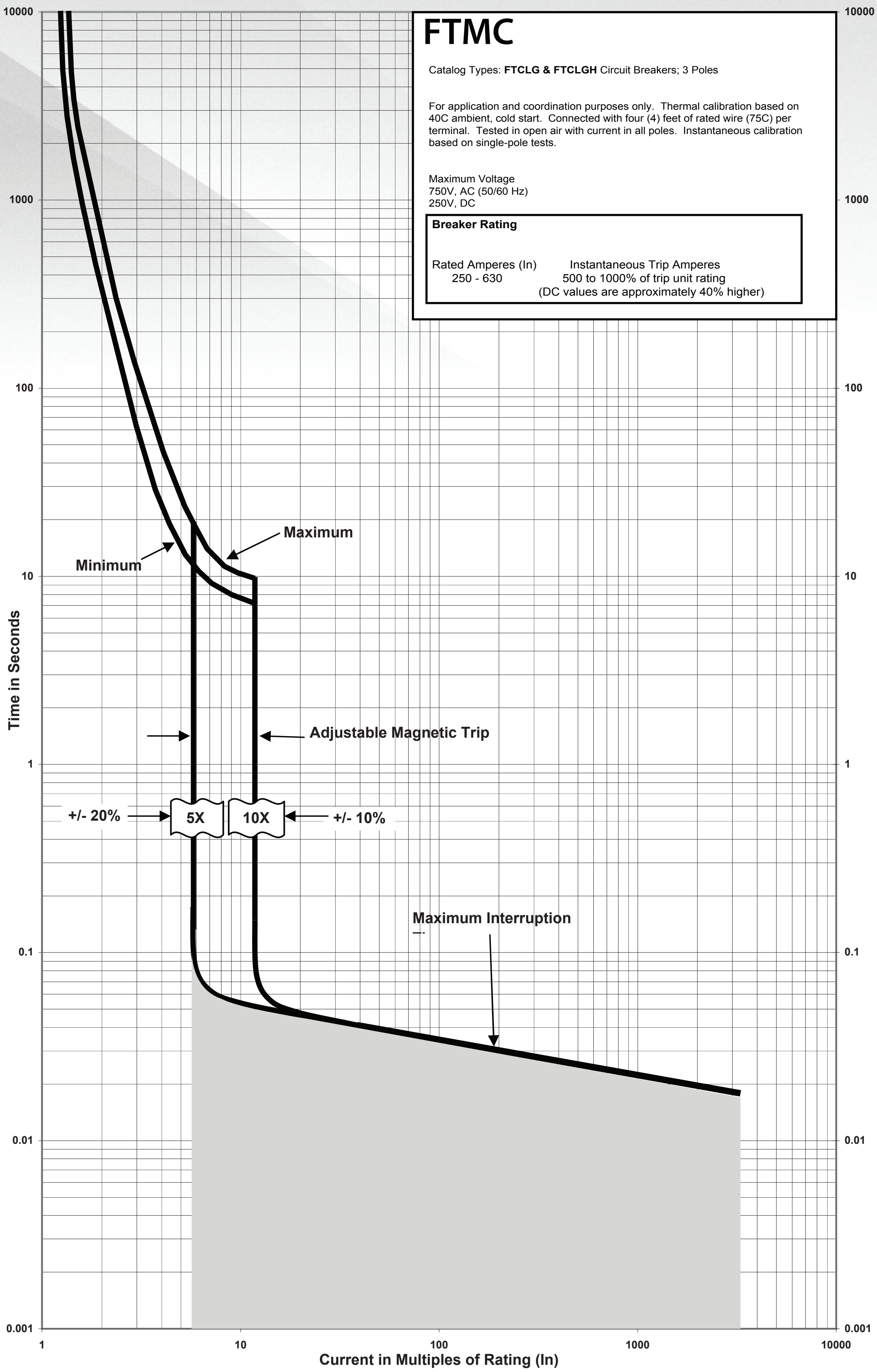
Time Current Curve

FTCK MOLDED CASE CIRCUIT BREAKERS 315-400A (55˚C)



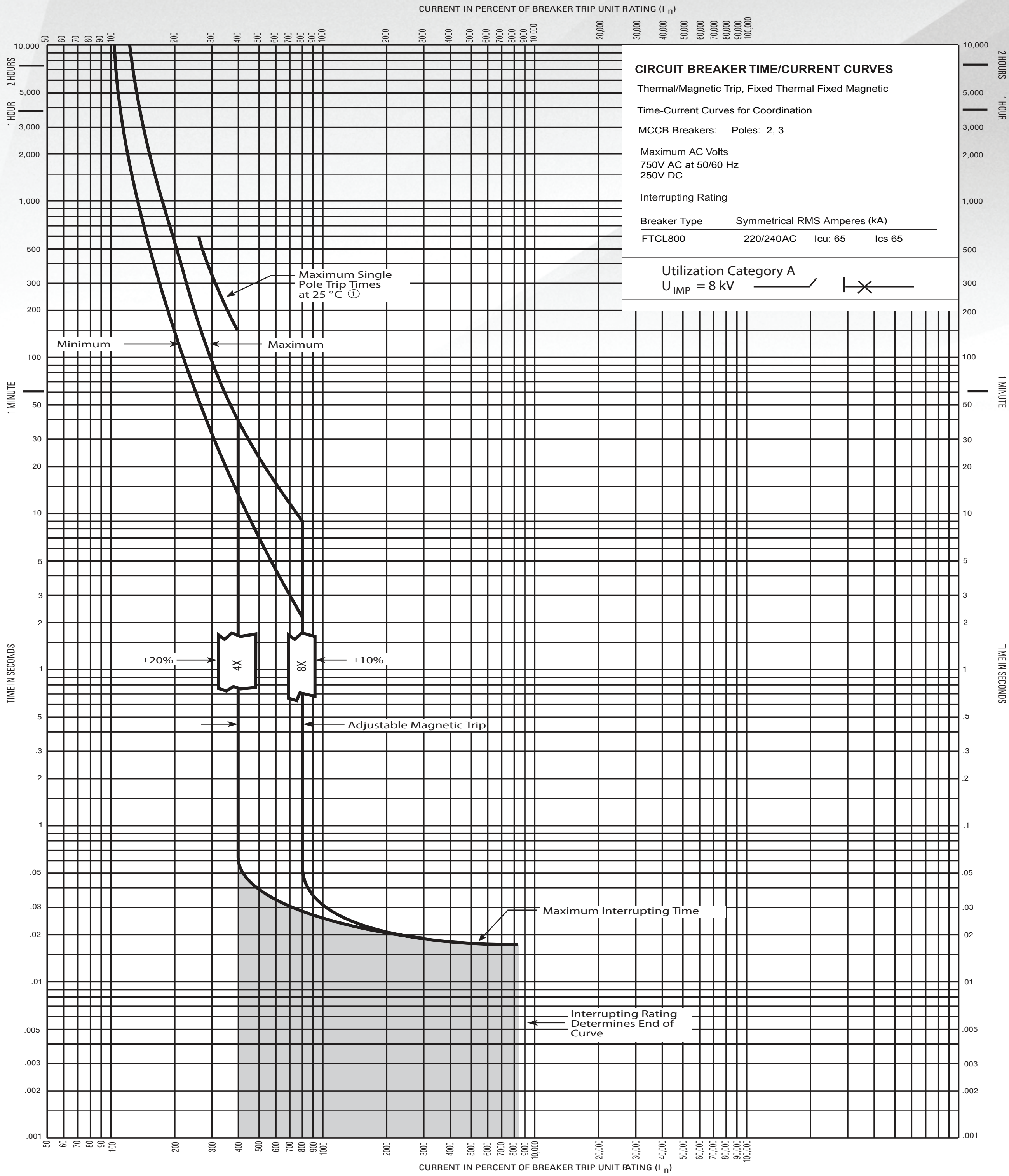
Time Current Curve

FTCLG MOLDED CASE CIRCUIT BREAKERS 250-630A (55℃)



Time Current Curve

FTCL MOLDED CASE CIRCUIT BREAKERS 800A (55℃)



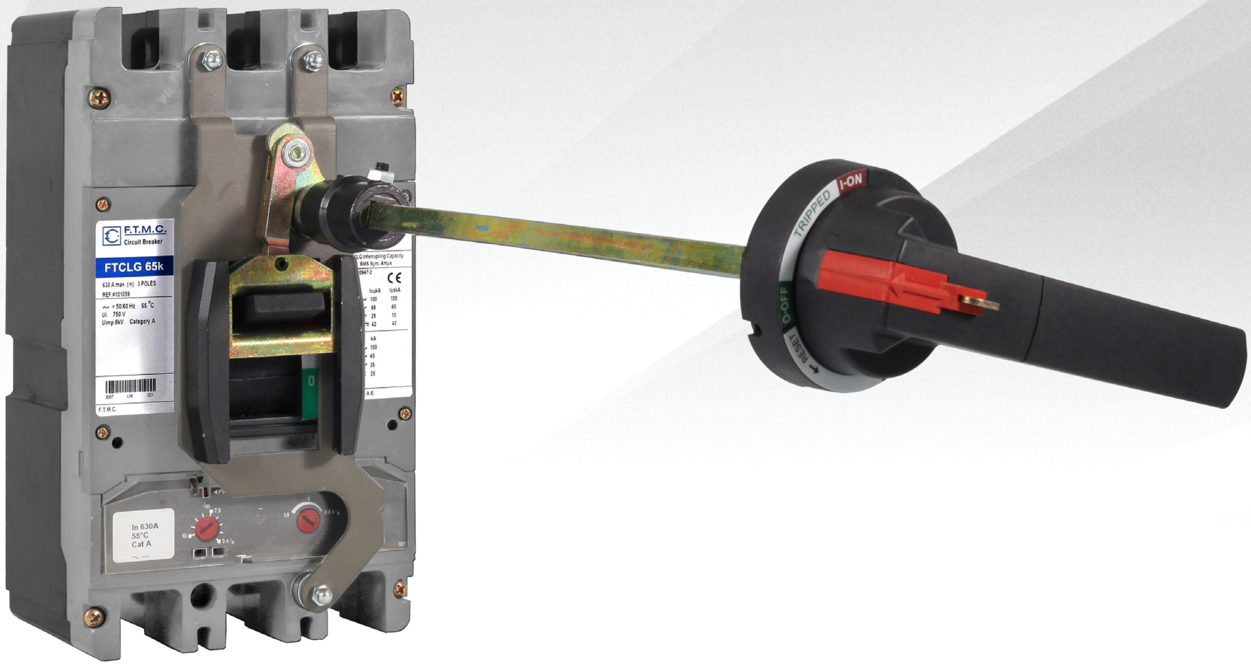
F.T.M.C. Motor Operator For MCCB

Motor Operator

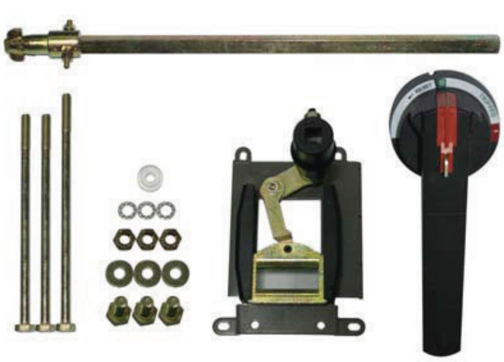
Frame	Ref.NO.	Part No.
FTCF	F101105	MOPF240
FTCJ	F101106	MOPJ240
FTCK	F101107	MOPK240
FTCLG	F101108	MOPLG240
FTCL	F101109	MOPL240

F.T.M.C.TYPE RHM

Rotary Handle Mechanisms



ROTARY HANDLE	MCCB Frame	Ref.No.	Rotary Handle Part No.	Shaft Length
FTCRHMG	FTCG	F101111	120FTMC.7245	290mm
FTCRHMF	FTCF	F101112	120FTMC.7345	290mm
FTCRHMJ	FTCJ	F101113	120FTMC.7445	290mm
FTCRHMK	FTCK	F101114	120FTMC.7545	290mm
FTCRHMLG	FTCLG	F101115	120FTMC.7645	290mm
FTCRHML	FTCL	F101116	120FTMC.7745	290mm
FTCRHMN	FTCN	F101118	120FTMC.7845	290mm



Enclosure for MCCB (FTCG)

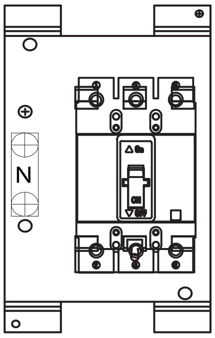
IEC 60947 Circuit Breakers

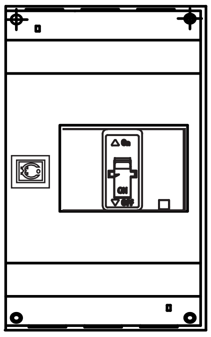
Product Description :

Structure and features:
This distribution boxes for breaker from16-100A, Installation and dismounting are easy.

Plastic Box For FTCG IEC 60947

Rating	Ref.No.	1 Pole	Ref.No.	2 Poles	Ref.No.	3 Poles
16	F101119	FTCGE1016	F101130	FTCGE2016	F101141	FTCGE3016
20	F101120	FTCGE1020	F101131	FTCGE2020	F101142	FTCGE3020
25	F101121	FTCGE1025	F101132	FTCGE2025	F101143	FTCGE3025
32	F101122	FTCGE1032	F101133	FTCGE2032	F101144	FTCGE3032
40	F101123	FTCGE1040	F101134	FTCGE2040	F101145	FTCGE3040
50	F101124	FTCGE1050	F101135	FTCGE2050	F101146	FTCGE3050
63	F101125	FTCGE1063	F101136	FTCGE2063	F101147	FTCGE3063
70	F101126	FTCGE1070	F101137	FTCGE2070	F101148	FTCGE3070
80	F101127	FTCGE1080	F101138	FTCGE2080	F101149	FTCGE3080
90	F101128	FTCGE1090	F101139	FTCGE2090	F101150	FTCGE3090
100	F101129	FTCGE1100	F101140	FTCGE2100	F101151	FTCGE3100



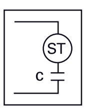
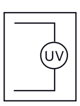


Lock and Terminal Shield

Maximum rated current (Amperes)	30-100	150-200	300-400	400-600	800
Breaker type /IEC60947-2	FTCG3100	FTCF3200	FTCK3400	FTCL3600	FTCL3800
Breaker Capacity (kA rms) AC 50/60Hz	60Hz	60Hz	60Hz	60Hz	60Hz
220VAC Icu	65	85	85	85	85
220VAC Ics	33	85	85	85	85
380/415VAC Icu	25	50	50	50	50
380/415VAC Ics	13	50	50	50	50
Rated insulation voltage U, IEC 947-2	750 VAC	750 VAC	750 VAC	750 VAC	750 VAC
Rated Impulse withstand voltage U imp	8 KV	8 KV	8 KV	8 KV	8 KV
Ambient Temperature	55°C	55°C	55°C	55°C	55°C
Dimensions (mm)	H W D	H W D	H W D	H W D	H W D
	123.8 76.2 66.7	152.4 105 86	258 183 104	273 210 104	406 280 104
Weight (approximate) Kg.	1.2	2.3	6.1	9.4	11.3

Part No.	Ref. No.	Catalogue & Description
FTCGTS3030	F101152	FTCG3030 with lock and terminal shield
FTCGTS3036	F101153	FTCG3060 with lock and terminal shield
FTCGTS3100	F101154	FTCG3100 with lock and terminal shield
FTCFTS3030	F101155	FTCF3150 with lock and terminal shield
FTCFTS3030	F101156	FTCF3200 with lock and terminal shield
FTCKTS3300	F101157	FTCK3300 with lock and terminal shield
FTCKTS3400	F101158	FTCK3400 with lock and terminal shield
FTCLTS3500	F101159	FTCL3500 with lock
FTCLTS3600	F101160	FTCL3600 with lock
FTCLTS3800	F101161	FTCL3800 with lock

MCCB Accessories

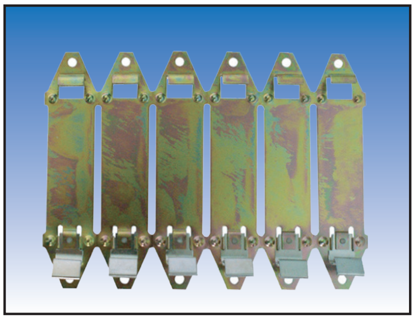
Accessory		Pole Location	Frame						
			FTCG	FTCF	FTCJ	FTCK	FTCLG	FTCL	FTCN
Field Fit Kit Catalogue Numbers									
Alarm Lockout	Make/Break	Left	-	F103136	F103166	F103196	F103226	F103256	F103286
		Right	-	F103137	F103167	F103197	F103227	F103257	F103287
	2 Make/2 Break	Left	-	F103138	F103168	F103198	F103228	F103258	F103288
		Right	-	F103139	F103169	F103199	F103229	F103259	F103289
Auxiliary Switch	1A, 1B	Left	-	F103140	F103170	F103200	F103230	F103260	F103290
		Right	F103131	F103141	F103171	F103201	F103231	F103261	F103291
	2A, 2B	Left	-	F103142	F103172	F103202	F103232	F103262	F103292
		Right	F103132	F103143	F103173	F103203	F103233	F103263	F103293
	3A, 3B	Left	-	F103144	F103174	F103204	F103234	F103264	F103294
		Right	-	F103145	F103175	F103205	F103235	F103265	F103295
Auxiliary Switch / Alarm Lockout		Left	-	F103146	F103176	F103206	F103236	F103266	F103296
		Right	-	F103147	F103177	F103207	F103237	F103267	F103297
Shunt Trip – Standard	120 VAC	Left	F103133	F103148	F103178	F103208	F103238	F103268	F103298
		Right	-	F103149	F103179	F103209	F103239	F103269	F103299
	240 VAC	Left	F103134	F103150	F103180	F103210	F103240	F103270	F103300
		Right	-	F103151	F103181	F103211	F103241	F103271	F103301
	24 VDC	Left	F103135	F103152	F103182	F103212	F103242	F103272	F103302
		Right	-	F103153	F103183	F103213	F103243	F103273	F103303
	48 VDC	Left	-	F103154	F103184	F103214	F103244	F103274	F103304
		Right	-	F103155	F103185	F103215	F103245	F103275	F103305
Shunt Trip – Low Energy		Left	-	F103156	F103186	F103216	F103246	F103276	F103306
		Right	-	F103157	F103187	F103217	F103247	F103277	F103307
Undervoltage Release Mechanism	120 VAC	Left	-	F103158	F103188	F103218	F103248	F103278	F103308
		Right	-	F103159	F103189	F103219	F103249	F103279	F103309
	240 VAC	Left	-	F103160	F103190	F103220	F103250	F103280	F103310
		Right	-	F103161	F103191	F103221	F103251	F103281	F103311
	24 VDC	Left	-	F103162	F103192	F103222	F103252	F103282	F103312
		Right	-	F103163	F103193	F103223	F103253	F103283	F103313
	48 VDC	Left	-	F103164	F103194	F103224	F103254	F103284	F103314
		Right	-	F103165	F103195	F103225	F103255	F103285	F103315

Base Mounting Plate

Base mounting plate for MCB-FTCC,FTCG-Frame.

Suitable for mounting (6) single - pole circuit breakers.

Frame	Part No.	Ref. No.
FTCG	FTCBMP	F101242



Base mounting plate for FTCC, FTCG-Frame

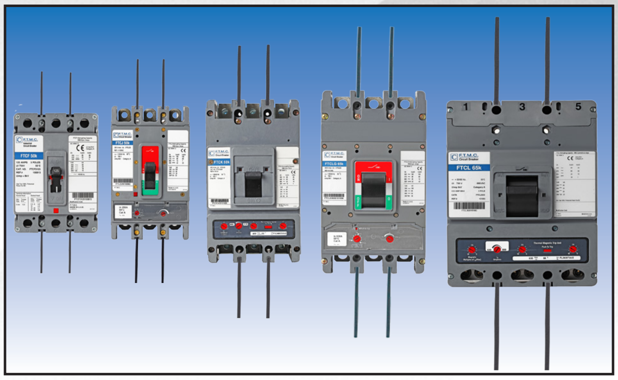
4

MCCB Accessories

Interphase Barriers

This interphase barriers provide additional electrical clearance between circuit breaker poles for special termination applications.
the barriers are high dielectric insulation plates that are installed in the molded slotes between the terminals.(Field installation only) Two per package.

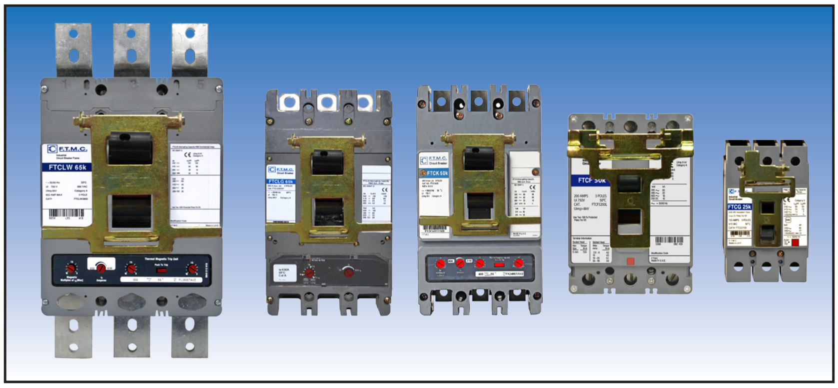
Frame	Part No.	Ref. No.
FTCF	FTCIBF	F101243
FTCJ	FTCIBJ	F101244
FTCK	FTCIBK	F101245
FTCLG	FTCIBLG	F101246
FTCL	FTCIBL	F101247



Padlockable Handle Lock

The Padlockable Handle Lock allows the handle to be locked in the ON or OFF position. (Trip-free operation allows the circuit breaker to trip when the handle lock holds the circuit breaker handle in the ON position.) The mounts on the circuit breaker cover within the trimline. The cover is predrilled on both sides of the operating handle so that the hasp can be mounted on either side of the handle. The Lock will accommodate up to three padlocks with 1/4-inch (6 mm) shackles, one per circuit breaker

Part No.	Frame	Ref. No.
FTCPHLG	FTCG	F101117
FTCPHLF	FTCF	F101248
FTCPHLJ	FTCJ	F101249
FTCPHLK	FTCK	F101250
FTCPHLLG	FTCLG	F101251
FTCPHLL	FTCL	F101252



Snap-On Padlockable Handle Lock

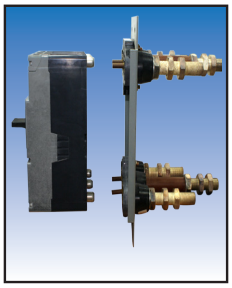
The Snap-On Padlockable Handle Lock allows the handle to be locked in the OFF or ON position. (Trip-free operation allows the circuit breaker to trip when the handle lock holds the circuit breaker handle in the ON position.)
This device was designed for use on the 1-pole circuit breaker, but may be used on 1-, 2-, 3- and 4-pole styles. The handle lock snaps onto the escutcheon area of the handle with an optional retaining screw for added secureness.The handle lock will accommodate one padlock with a 1/4-inch (6 mm) shackle. Listed per UL File E7819.(Field installation only.

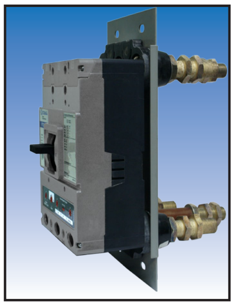
PartNo.	Frame	Ref. No.
FTCSPHLG1P	FTCG	F101253
FTCSPHLF1P	FTCF	F101254

Plug-in Adapters

Plug-in Adapters simplify installation and front removal of circuit breakers. Individual line and load plug-in adapters are available for rear connection applications on 2-, 3- and 4-pole circuit breakers. Common mounting plates for line- and load-end adapters are available.
One Plug-in Adapter Kit is required for line-end and one for load-end.

Frame	Part No.	Continuous Current Rating (Amp)	Ref. No.
FTCF	FTCPAF	100 - 225	F101255
	FTCPAFM	Mounting Plate	F101256
FTCJ	FTCPAJ	63-250	F101257
	FTCPAJM	Mounting Plate	F101258
FTCK	FTCPAK	70-400	F101259
	FTCPAKM	Mounting Plate	F101260
FTCLG	FTCPALG	250-630	F101261
	FTCPALGM	Mounting Plate	F101262
FTCL	FTCPAL	400-800	F101263
	FTCPALM	Mounting Plate	F101264





Key Interlock Kit

The Key Interlock is used to externally lock the circuit breaker handle in the OFF position. When the key interlock is locked, an extended deadbolt blocks movement of the circuit breaker handle.
Uniquely coded keys are removable only with the deadbolt extended.
Each coded key controls a group of circuit breakers for a given specific customer installation.
The mounting kit comprises a mounting plate, which is secured to the circuit breaker cover in either the left- or right-pole position, key interlock mounting screws, and a wire seal.
Specific mounting kits are required for individual key interlock types.

Ordering Information

Key interlock mounting kits are for field installation only. Select mounting kit Catalog Numbers to match type of lock used. Key interlocks are supplied by customer.

Frame	Part No.	Lock Type	Ref. No.
FTCF	FTCKIF	Kirk	F101265
FTCJ	FTCKIJ	Kirk	F101266
FTCK	FTCKIK	Kirk	F101267
FTCLG	FTCKILG	Kirk	F101268
FTCL	FTCKIL	Kirk	F101269

FTCK,FTCLG,FTCL, and FTCN

Drawout Cassettes

The Drawout Cassette is available for use with FTCK, FTCLG, FTCL and FTCN, 3- and 4 pole breakers.
Also available are drawout cassettes for use with the standard 3-pole 65 and 100kA/480 Vac.
The cassettes consist of two separate components: the movable mechanism, which attches to the breaker, and the stationary mechanism which houses in the cassette. The stationary mechanism is shipped separately the FTCK, FTCL, FTCL, and FTCN Drawout cassettes, all necessary parts of installation are included in the one catalog number. Features of the drawout cassettes for the FTCK, FTCLG, FTCL, and FTCN include:

- Trip on drawout – Breaker will trip if it is in the ON position when withdrawn from the cassette.
- Secondary Terminal Block – The drawout cassettes include a secondary terminal block for easier

4 MCCB Accessories

access when wiring low voltage accessories, including shunts and under-voltage release.

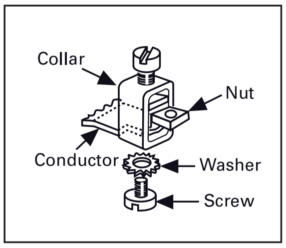
The drawout mechanism has three primary positions:

- Connected – The breaker is fully connected to the primary stabs and secondary contacts.
- Disconnected – Both the primary stabs and the secondary contacts are disconnected.
- Withdraw – The breaker can be removed from the cassette.

Frame	Part No.	Ref. No.
FTCK	FTCDCK	F101270
FTCLG	FTCDCLG	F101271
FTCL	FTCDCL	F101272
FTCN	FTCDCN	F101273

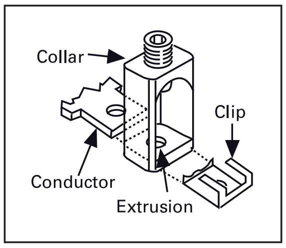
Line And Load Terminals

Catalogue Number



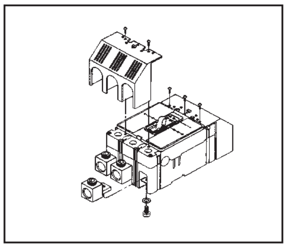
FTCG,FTCF(Frame)

Insert collar enclosing conductor as shown. Locate nut on top of conductor and tighten securely with screw and washer. Caution: Collar must surround conductor



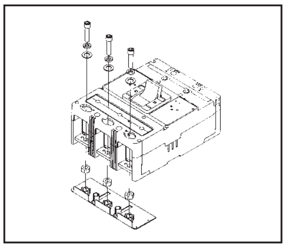
FTCF(Frame)

Insert collar enclosing conductor and centre on extrusion. Install clip with legs on top of conductor and snap around bottom of collar.



FTCG,FTCF,FTCK & FTCL(Frame)

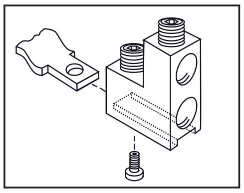
Assemble collar on top of conductor and tighten to 100 lbs. Slide the terminal shield into position; use the high-low screws to secure the shield in place.

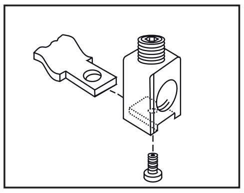


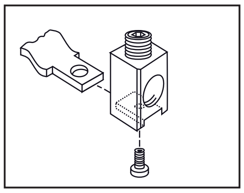
FTCG,FTCF,FTCK & FTCL(Frame)

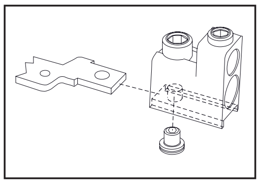
Endcap kits are used on The Frame breaker line load to connect bus bar or similar electrical connections. Includes hardware.

FTCK (Frame)

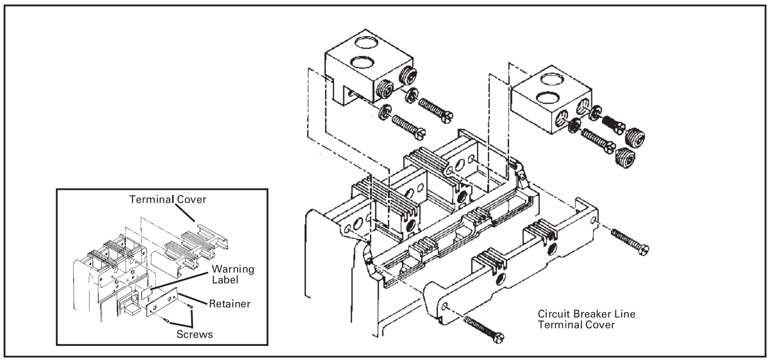








FTCL (Frame)



Power-Wave - Frame (Air Circuit Breaker)

Introduction

Rated from 400 to 6300A the Power - Wave Plus circuit breaker has been designed to meet the most stringent demands in fault detection and safe interruption thereof.

Available in 2 frame sizes:

- Frame size 1 ranging from 400 to 2500A
- Frame size 2 ranging from 800 to 4000A

The range has been developed aesthetically and technically to co-ordinate with other protective devices within our company for industrial/domestic applications.

All 3 frame sizes have unique look available with both fixed pattern and drawout versions which can be manually or electrically operated. These ACBs are designed to offer multiple main connection options it also comes with a wide range of easy-to-install accessories.

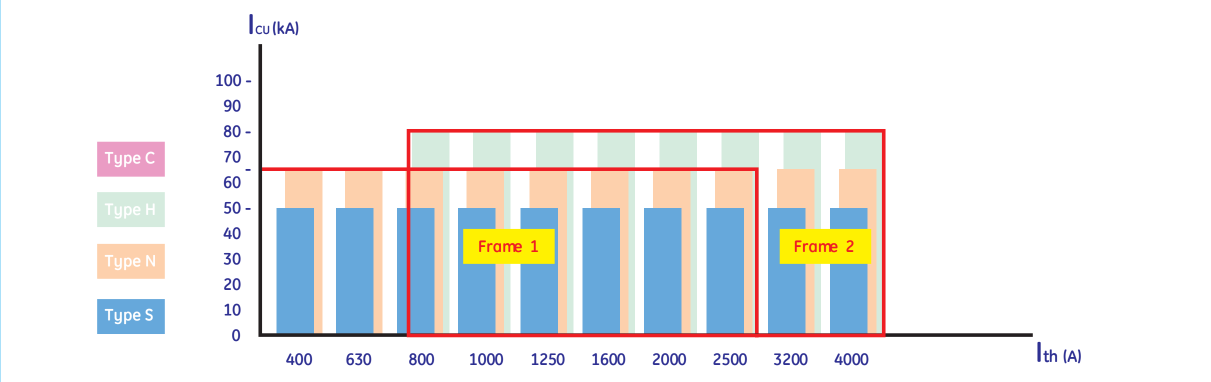
Specification

Power - Wave Plus air circuit breakers comply with the following specifications for low voltage switchgear:

- IEC 947-1
- IEC 947-2
- IEC 947-3
- VDE 0660 Part 101 and Part 107
- Utilization category B

Approvals

LOVAG certification in accordance with IEC 947-2, BS EN 60947-2 ASTA, KEMA



Compact frame sizes

Frame size 1 - 400 to 2500A

Frame size 2 - 800 to 4000A

- Frame 1 & 2
  Fixed & withdrawable version is offered with 3 or 4 pole configuration, front and rear access connections (horizontal / vertical).
- Devices provided with or without protection relay
- Manual or electrical operation and built-in safety features e.g. safety shutters
- Wide range of protection settings offering full selectivity combinations of earth fault protection with simple & easy service on site

Performance ranges (1)

Type S	:	50 kA	Icu = Ics = Icw
Type N	:	65 kA	Icu = Ics = Icw
Type H	:	80 kA	Icu = Ics = Icw
Type C (2)	:	100 kA	Icu = Ics = Icw

(1) Ratings shown at 500V AC
(2) Ratings shown at 690V AC

5 Air Circuit Breakers

Power-Wave

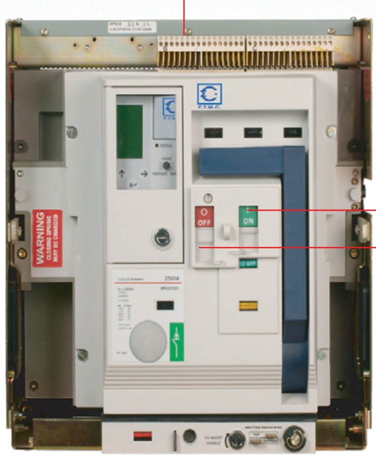
Fixed Pattern Circuit Breaker

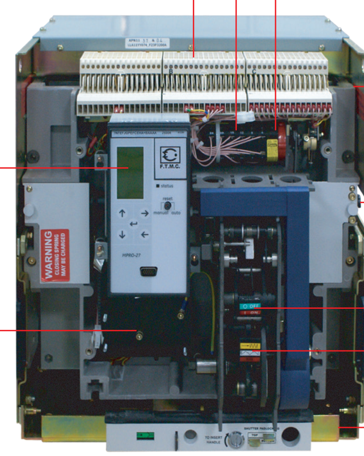
Frame 1 & 2

All Power-WAVE Plus fixed pattern air circuit breakers incorporate a stored energy mechanism. The spring can be charged either manually or electrically via a motor operator that is automatically activated after the closing operation.
IP43 front panel and door escutcheon seals are standard features with IP20 protected secondary isolating contacts. For enhanced protection, an optional IP54 door panel is also available.

Installation
Fixed pattern Power-WAVE Plus can be fastened into any suitable switchboard or cubicle arrangement using four M8 bolts.
Clearance is only required above the unit for the removal and inspection of the arc chutes (see dimensional drawings for mounting details and recommended clearance distances).
An earthing point is provided on either side of the circuit breaker.

Power supply
All stated short-circuit ratings are certified with incoming supply connection made to either upper or lower terminals.





- Trip-free operating mechanism
- Positive 'ON/OFF' main contact indication
- Mechanical/electrical anti-pumping device
- Charging spring status indication
- Ergonomic manual spring charging handle
- Field-mountable range of accessories
- Auxiliary switches 5 NO and 3 NC, potential free 10A 250V (standard)
- Mechanical trip alarm switch (1 NO/NC) (optional)
- Padlockable push-button cover (for mechanical and electrical lock)
- Mechanical cable interlocking (optional)
- Termination: rear, horizontal or front access (optional)
- Electrical clearances according to IEC 947-2
- Front access of secondary terminals for simple connection
- Maintainable arcing contacts are offered as a standard feature.

1. Motorised spring charging unit (optional)
2. FTCCM - protection relay (optional)
3. Secondary contacts
4. Shunt trip (optional)
5. Closing coil (optional)
6. Undervoltage release (optional)
7. Manual charging handle
8. ON/OFF push-buttons
9. Push-button padlockable covers
10. Positive contact indication
11. Charging spring status indication
12. Mounting plate

Power-Wave

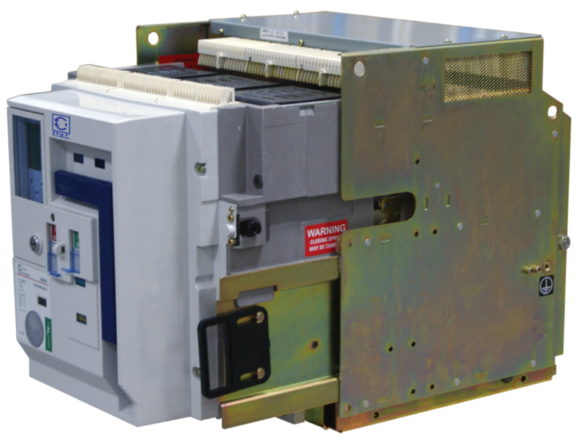
Withdrawable Pattern Circuit Breaker

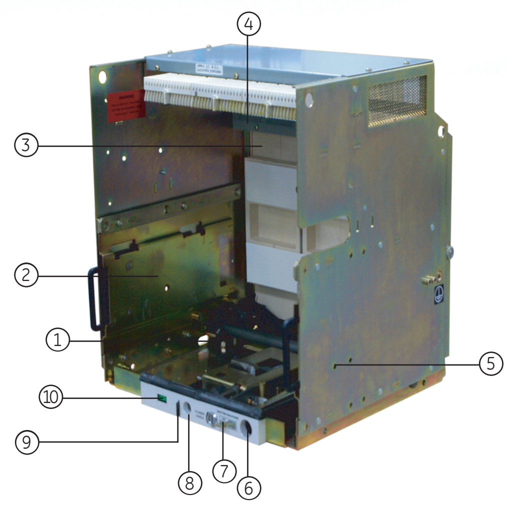
Frame 1 & 2

Pre-mounted into a self-contained 'cassette', this versatile circuit breaker can be inserted or withdrawn via sliding rails using a racking drive mechanism controlled by a racking handle.
It provides three set positions:
Disconnected / Test / Connected.
Any attempt to withdraw the unit whilst in service will automatically trip the breaker, either by the racking position safety mechanism or by the insertion of the racking handle. It can be racked to the disconnected position with the cubicle door closed or open.

Installation
Circuit breakers are delivered pre-mounted in the cassette (standard)
Versatile **fixing** arrangements allow mounting onto any switchboard or cubicle using four M8 bolts (see dimensional drawings for mounting details and recommended clearance distances)
Earthing point situated on the right hand side of cassette (front view)

Power supply
All stated short-circuit ratings are certified with incoming supply connection made to either upper or lower terminals.





- Insulated shutters to isolate the main contact zone
- Front access padlocking for safety shutters
- Secure padlocking in the "Disconnect" position
- Clearly visible operational position indication
- Carriage position switch (optional)
- Termination: Flat copper palms (standard) with captive M10 fixing nuts
- Rear terminal adaptors for horizontal/vertical connection (optional)
- Front access connection (optional)
- Automatic disconnect of secondary circuits
- Lifting lugs for ease of removing the circuit breaker from the cassette (Power-Wave Plus handling truck required)
- Front access of secondary terminals for simple connection

1. Carriage position switch (optional)
2. Slide rails
3. Insulated safety shutter
4. Secondary terminals
5. 2 or 3 way interlock mechanism (optional)
6. Racking handle (storage)
7. Padlocking for safety shutters
8. Insertion hole for racking handle
9. Padlocking in the DISCONNECTED position
10. Operational position indication
11. Key interlock (optional)*

* Feature not visible in picture

5 Air Circuit Breakers

Power-Wave

Characteristics

Performance Data

Characteristics	Symbol	Units	400		630		800		1000		1250	
Rated current (40°C)	In	A	400		630		800		1000		1250	
Endurance(n° of operating cycles)												
Mechanical (with maintenance)			20000		20000		20000		20000		20000	
Mechanical (without maintenance)			10000		10000		10000		10000		10000	
Electrical (at rated current)			5000		5000		5000		5000		5000	
Rated service voltage(50/60 Hz)	Ue	V	690		690		690		690		690	
Rated insulationvoltage	Ui	V	1000		1000		1000		1000		1000	
Rated impulse withstandvoltage	Uimp	V	8000		8000		8000		8000		8000	
Number of poles			3 & 4		3 & 4		3 & 4		3 & 4		3 & 4	
Rating of 4th pole			100%		100%		100%		100%		100%	
ACB type			S	N	S	N	S	N	S	N	S	N
Framesize			1	1	1	1	1	1	1	1	1	1
Rated ultimate short-circuit	Icu	kA (rms)										
Breaking capacity 220V			50	65	50	65	50	65	50	65	50	65
415V			50	65	50	65	50	65	50	65	50	65
500V			50	65	50	65	50	65	50	65	50	65
600V			50	50	50	50	50	50	50	50	50	50
690V			40	40	40	40	40	40	40	40	40	40
Rated service short-circuit	Ics	kA (rms)										
Breaking capacity 220V			50	65	50	65	50	65	50	65	50	65
415V			50	65	50	65	50	65	50	65	50	65
500V			50	65	50	65	50	65	50	65	50	65
600V			50	50	50	50	50	50	50	50	50	50
690V			40	40	40	40	40	40	40	40	40	40
Rated short time withstandcurrent												
1 second	Icw	kA (rms)	50	65	50	65	50	65	50	65	50	65
3 seconds	Icw	kA (rms)	40	50	40	50	40	50	40	50	40	50
Rated short-circuit 415V		kA (peak)	143	143	143	143	143	143	143	143	143	143
making capacity 500V			143	143	143	143	143	143	143	143	143	143
600V			143	105	143	105	143	105	105	105	143	105
690V			84	84	84	84	84	84	84	84	84	84
Power dissipation at In (fixed breaker)	W	Watt	16	11	39	27	63	43	106	68	175	105
Power dissipation at In (withdrawable)	W	Watt	33	22	75	53	127	86	211	135	351	211

Temperature deratings

Free Air [1]

The Power-Wave Plus ACBs may operate at higher ambient temperatures than 40°C in certain installation conditions. In this case the current rating in Amperes should be reduced as indicated below.

Ambient temp. around the breaker	Current rating(A) above 40°C							
Rated current (A)	800	1000	1250	1600	2000	2500	3200	4000
50°C	800	1000	1250	1600	2000	2450	3200	3727
60°C	800	1000	1250	1445	2000	2232	3200	3367

The figures specified apply to withdrawable ACB's with flat face vertical copper connections.

(1) Protection degree IP00. For use in enclosures with interior temperatures of 40°C to 60°C the relevant IP values can be applied.

Rated short-circuit capacity

In accordance with IEC 947-2 at 415V

Breaker range	Rating (A)	Type	Icu	Ics	Icw 1 sec	Icw 500 ms
S	400 to 4000	Fixed or withdrawable	50kA	50kA	50kA	-
N	400 to 4000	Fixed or withdrawable	65kA	65kA	65kA	-

Recommended minimum copper size

In accordance with IEC 947-2

Rating(A)	Copper / phase
400	2 x 50 x 5
630	2 x 50 x 5
800	2 x 50 x 5
1000	2 x 60 x 5
1250	2 x 50 x 10
1600	2 x 50 x 10
2000	3 x 50 x 10
2500	4 x 50 x 10
3200	4 x 100 x 10
4000	4 x 100 x 10 + 1 x 100 x 5

Power-Wave

1600		2000		2500		3200		4000	
20000		20000		20000		20000		20000	
10000		10000		10000		10000		10000	
5000		5000		5000		5000		5000	
690		690		690		690		690	
1000		1000		1000		1000		1000	
8000		8000		8000		8000		8000	
3 & 4		3 & 4		3 & 4		3 & 4		3 & 4	
100%		100%		100%		100%		100%	
S	N	S	N	S	N	S	N	S	N
1	1	1/2	1/2	1/2	1/2	2	2	2	2
50	65	50	65	50	65	50	65	50	65
50	65	50	65	50	65	50	65	50	65
50	65	50	65	50	65	50	65	50	65
50	50	50	50	50	50	50	50	50	50
40	40	40	40	40	40	40	40	40	40
50	65	50	65	50	65	50	65	50	65
50	65	50	65	50	65	50	65	50	65
50	65	50	65	50	65	50	65	50	65
50	50	50	50	50	50	50	50	50	50
40	40	40	40	40	40	40	40	40	40
50	65	50	65	50	65	50	65	50	65
40	50	40	50	40	50	40	50	40	50
143	143	143	143	143	143	143	143	143	143
143	143	143	143	143	143	143	143	143	143
143	105	143	105	143	105	143	105	143	105
84	84	84	84	84	84	84	84	84	84
287	196	224	224	224	224	418	418	571	571
574	392	490	490	490	490	888	888	1224	1224

Dimensions (mm)

Framesize	Rating(A)	Poles	Version [1]	Height [2]	Length [3]	Depth [4]
1	400 to 2500	3	W	440	329	390
			F	430	329	328
		4	W	440	429	390
			F	430	429	328
2	800 to 3200	3	W	440	419	392
			F	430	419	328
		4	W	440	549	392
			F	430	549	328
2	4000	3	W	440	419	482
			F	430	419	328
		4	W	440	549	482
			F	430	549	328

(1) Version
W = Withdrawable
F = Fixed
(2) Height (H) is from mounting surface to highest part of the ACB
(3) Length (L) is distance between widest part of the breaker
(4) Depth (D) is from the cubicle door to the rear moulding

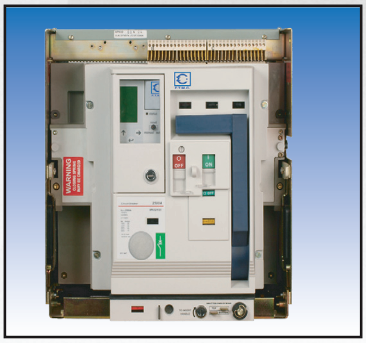
Power-Wave

Weights (kg)

Fixed pattern ACB	Frame	S range 3 Pole	S range 4 Pole	N range 3 Pole	N range 4 Pole
400 to 1600A	1	36	44	39	49
2000 to 2500A	1	43	54	43	54
800 to 3200A	2	53	68	53	68
4000A	2	53	68	53	68
Withdrawable ACB	**Frame**	**3 Pole**	**4 Pole**	**3 Pole**	**4 Pole**
400 to 1600A	1	63	77	68	84
2000 to 2500A	1	72	90	72	90
800 to 3200A	2	90	117	90	117
4000A	2	111	144	111	144
Cassette only	**Frame**	**3 Pole**	**4 Pole**	**3 Pole**	**4 Pole**
400 to 1600A	1	27	33	29	36
2000 to 2500A	1	29	36	29	36
800 to 3200A	2	37	49	37	49
4000A	2	58	76	58	76

Power-Wave

Air Circuit Breaker Draw Out - 50, 65 kA



Air Circuit Breaker
manual and electrical operated
Drow out pattern : breaker and cassette
with flat copper terminal, rear connected
including 5 NO and 3 NC auxiliary switch

Cat. No. 50 kA	Ref. No.	Cat. No. 65 kA	Ref. No.	Frame	Rating (A)	Position of the	Poles
FTCPWS31W04-A	F101274	FTCPWN31W04-A	F102084	1	400		3
FTCPWS4L1W04-A	F101275	FTCPWN4L1W04-A	F102085			LEFT	4
FTCPWS4R1W04-A	F101276	FTCPWN4R1W04-A	F102086			RIGHT	4
FTCPWS31W06-A	F101277	FTCPWN31W06-A	F102087	1	630		3
FTCPWS4L1W06-A	F101278	FTCPWN4L1W06-A	F102088			LEFT	4
FTCPWS4R1W06-A	F101279	FTCPWN4R1W06-A	F102089			RIGHT	4
FTCPWS31W08-A	F101280	FTCPWN31W08-A	F102090	1	800		3
FTCPWS4L1W08-A	F101281	FTCPWN4L1W08-A	F102091			LEFT	4
FTCPWS4R1W08-A	F101282	FTCPWN4R1W08-A	F102092			RIGHT	4
FTCPWS31W10-A	F101283	FTCPWN31W10-A	F102093	1	1000		3
FTCPWS4L1W10-A	F101284	FTCPWN4L1W10-A	F102094			LEFT	4
FTCPWS4R1W10-A	F101285	FTCPWN4R1W10-A	F102095			RIGHT	4
FTCPWS31W12-A	F101286	FTCPWN31W12-A	F102096	1	1250		3
FTCPWS4L1W12-A	F101287	FTCPWN4L1W12-A	F102097			LEFT	4
FTCPWS4R1W12-A	F101288	FTCPWN4R1W12-A	F102098			RIGHT	4
FTCPWS31W16-A	F101289	FTCPWN31W16-A	F102099	1	1600		3
FTCPWS4L1W16-A	F101290	FTCPWN4L1W16-A	F102100			LEFT	4
FTCPWS4R1W16-A	F101291	FTCPWN4R1W16-A	F102101			RIGHT	4
FTCPWS31W20-A	F101292	FTCPWN31W20-A	F102102	1	2000		3
FTCPWS4L1W20-A	F101293	FTCPWN4L1W20-A	F102103			LEFT	4
FTCPWS4R1W20-A	F101294	FTCPWN4R1W20-A	F102104			RIGHT	4
FTCPWS31W25-A	F101295	FTCPWN31W25-A	F102105	1	2500		3
FTCPWS4L1W25-A	F101296	FTCPWN4L1W25-A	F102106			LEFT	4
FTCPWS4R1W25-A	F101297	FTCPWN4R1W25-A	F102107			RIGHT	4
FTCPWS32W20-A	F101298	FTCPWN32W20-A	F102108	2	2000		3
FTCPWS4L2W20-A	F101299	FTCPWN4L2W20-A	F102109			LEFT	4
FTCPWS4R2W20-A	F101300	FTCPWN4R2W20-A	F102110			RIGHT	4
FTCPWS32W25-A	F101301	FTCPWN32W25-A	F102111	2	2500		3
FTCPWS4L2W25-A	F101302	FTCPWN4L2W25-A	F102112			LEFT	4
FTCPWS4R2W25-A	F101303	FTCPWN4R2W25-A	F102113			RIGHT	4
FTCPWS32W32-A	F101304	FTCPWN32W32-A	F102114	2	3200		3
FTCPWS4L2W32-A	F101305	FTCPWN4L2W32-A	F102115			LEFT	4
FTCPWS4R2W32-A	F101306	FTCPWN4R2W32-A	F102116			RIGHT	4
FTCPWS32W40-A	F101307	FTCPWN32W40-A	F102117	2	4000		3
FTCPWS4L2W40-A	F101308	FTCPWN4L2W40-A	F102118			LEFT	4
FTCPWS4R2W40-A	F101309	FTCPWN4R2W40-A	F102119			RIGHT	4

Power-Wave

Air Circuit Breaker Fixed 50 , 65 kA

Air Circuit Breaker
manual and electrical operated
Fixed pattern : breaker with rear horizontal terminal
including 5 NO and 3 NC auxiliary switch

Cat. No. 50 kA	Ref. No.	Cat. No. 65 kA	Ref. No.	Frame	Rating (A)	Position of the	Poles
FTCPWS31F04-A	F101310	FTCPWN31F04-A	F102120	1	400		3
FTCPWS4L1F04-A	F101311	FTCPWN4L1F04-A	F102121			LEFT	4
FTCPWS4R1F04-A	F101312	FTCPWN4R1F04-A	F102122			RIGHT	4
FTCPWS31F06-A	F101313	FTCPWN31F06-A	F102123	1	630		3
FTCPWS4L1F06-A	F101314	FTCPWN4L1F06-A	F102124			LEFT	4
FTCPWS4R1F06-A	F101315	FTCPWN4R1F06-A	F102125			RIGHT	4
FTCPWS31F08-A	F101316	FTCPWN31F08-A	F102126	1	800		3
FTCPWSS4L1F08-A	F101317	FTCPWN4L1F08-A	F102127			LEFT	4
FTCPWS4R1F08-A	F101318	FTCPWN4R1F08-A	F102128			RIGHT	4
FTCPWS31F10-A	F101319	FTCPWN31F10-A	F102129	1	1000		3
FTCPWS4L1F10-A	F101320	FTCPWN4L1F10-A	F102130			LEFT	4
FTCPWS4R1F10-A	F101321	FTCPWN4R1F10-A	F102131			RIGHT	4
FTCPWS31F12-A	F101322	FTCPWN31F12-A	F102132	1	1250		3
FTCPWS4L1F12-A	F101323	FTCPWN4L1F12-A	F102133			LEFT	4
FTCPWS4R1F12-A	F101324	FTCPWN4R1F12-A	F102134			RIGHT	4
FTCPWS31F16-A	F101325	FTCPWN31F16-A	F102135	1	1600		3
FTCPWS4L1F16-A	F101326	FTCPWN4L1F16-A	F102136			LEFT	4
FTCPWS4R1F16-A	F101327	FTCPWN4R1F16-A	F102137			RIGHT	4
FTCPWS31F20-A	F101328	FTCPWN31F20-A	F102138	1	2000		3
FTCPWS4L1F20-A	F101329	FTCPWN4L1F20-A	F102139			LEFT	4
FTCPWS4R1F20-A	F101330	FTCPWN4R1F20-A	F102140			RIGHT	4
FTCPWS31F25-A	F101331	FTCPWN31F25-A	F102141	1	2500		3
FTCPWS4L1F25-A	F101332	FTCPWN4L1F25-A	F102142			LEFT	4
FTCPWS4R1F25-A	F101333	FTCPWN4R1F25-A	F102143			RIGHT	4
FTCPWS32F20-A	F101334	FTCPWN32F20-A	F102144	2	2000		3
FTCPWS4L2F20-A	F101335	FTCPWN4L2F20-A	F102145			LEFT	4
FTCPWS4R2F20-A	F101336	FTCPWN4R2F20-A	F102146			RIGHT	4
FTCPWS32F25-A	F101337	FTCPWN32F25-A	F102147	2	2500		3
FTCPWS4L2F25-A	F101338	FTCPWN4L2F25-A	F102148			LEFT	4
FTCPWS4R2F25-A	F101339	FTCPWN4R2F25-A	F102149			RIGHT	4
FTCPWS32F32-A	F101340	FTCPWN32F32-A	F102150	2	3200		3
FTCPWS4L2F32-A	F101341	FTCPWN4L2F32-A	F102151			LEFT	4
FTCPWS4R2F32-A	F101342	FTCPWN4R2F32-A	F102152			RIGHT	4
FTCPWS32F40-A	F101343	FTCPWN32F40-A	F102153	2	4000		3
FTCPWS4L2F40-A	F101344	FTCPWN4L2F40-A	F102154			LEFT	4
FTCPWS4R2F40-A	F101345	FTCPWN4R2F40-A	F102155			RIGHT	4

Trip Unit for ACB

Cat. No.	Ref. No.	Description
FTCPWS17PLUSF1&2	F101346	FTCPWS - 17 Plus for overcurrent and short circuit protection only
FTCPWS18PLUSF1&3	F101347	FTCPWS - 18 Plus (Digital display) for overcurrent and short circuit protection only
FTCPWS17PLUSF3	F101348	FTCPWS - 17 Plus for overcurrent and short circuit protection only (non-resettable)
FTCPWS17PLUSF3-ENG	F101349	FTMCM - 18 Plus for overcurrent and short circuit protection only (non-resettable)
FTCPWSPLUSUEF	F101350	Unrestricted Earth Fault option for FTCPWS - 17 and 18 Plus protection relay's
FTCPWSLUSNTL100	F101351	100% rated neutral protection for FTCPWS - 17 and 18 plus protection unit
FTCPWSPLUSNTL50	F101352	50% rated neutral protection for FTCPWS - 17 and 18 plus protection unit
FTCPWSLUSUEF3P3W	F101353	3 phase 3 wire unrestricted Earth Fault option for FTCPWS - 17 plus and 18 plus
FTCPWS30L-ENG	F101354	FTCPWS - 30L protection unit
FTCPWS30LR	F101355	FTCPWS - 30L protection unit with restricted earth fault only (English)
FTCPWS30L-ENGNR	F101356	FTCPWS - 30L protection unit (English version) without auto/manual reset button
FTCPWS30H-ENG	F101357	FTCPWS - 30H protection unit
FTCPWS30HR	F101358	FTCPWS - 30H protection unit with restricted earth fault only (English)
FTCPWS30H-ENGNR	F101359	FTCPWS - 30H protection unit (English version) without auto/manual reset button
FTCPWS40L-ENG	F101360	FTCPWS - 40L protection unit English version with MODBUS protocol
FTCPWS40L-ENGNR	F101361	FTCPWS - 40L protection unit (English version) without auto/manual reset button
FTCPWS40H-ENG	F101362	FTCPWS - 40H protection unit English version with MODBUS protocol
FTCPWS40H-ENGNR	F101363	FTCPWS - 40H protection unit (English version) without auto/manual reset button
FTCPWSREF	F101364	Restricted Earth Fault Protection (FTCPWS - 30 Only)
FTCPWSSEF	F101365	Standby Earth Fault Protection (FTCPWS - 30 Only)
FTCPWSNTSW	F101366	FTCPWS - 30/40 no-trip on fatal error (warn only) software facility
FTCPWSCOM	F101367	Communications facility (FTCPWS ODBUS protocol)
FTCPWSPU	F101368	FTCPWS-PRO Auxiliary power unit
FTCPWSTU17	F101369	Portable Test unit (for FTCPWS - 17 or 18 plus) UK power lead
FTCPWSPLUSTU-EURO	F101370	Portable Test unit (for FTCPWS - or 18 plus) Euro power lead
FTCPWSROTU-EURO	F101371	Portable Test Unit (for FTCPWS - 30/40) Euro power lead
FTCPWSPYU	F101372	Portable Test Unit (for FTCPWS - 30/40) UK power lead
FTCPWSPPB	F101373	Portable power box (for FTCPWS - 30/40)
FTCPWSMAC	F101374	Add-on Mechanical Alarm Contact (1x N/O)
FTCPWSACNC	F101375	Add-on Mechanical Alarm Contact (1x N/C)
FTCPWSAMM20	F101376	Spare PAMM for Use with FTCPWS - 20
FTCPWSAMM30/40	F101377	Spare PAMM for use with FTCPWS - 30 or FTCPWS - 40

Trip Unit for ACB FTCTU

Versions	FTCTU27	FTCTU50
Breakers Supported & Protection features	Power-WAVE frame 1+2	Power-WAVE frame 1+2
Long Time (overcurrent) 0.4-1, increments 0.05 22 bands. Multiple classes to IEC 947-4.	x	--
Long Time (overcurrent) 0.4-1, increments 0.05 44 bands. Multiple classes IEC 947-4 and Fuse bands	--	x
Short Time	x	x
Instantaneous	x	x
Reduced Inst Setpoint	--	x
Ground Fault Trip	x	x
Ground Fault Alarm	--	x
Earth Fault - UEF / REF / SEF	--	x
Thermal Memory	12 min.	12 min.
MCR	x	x
High Set Inst (HSIOC)	x	x
I/O (Physical I/O)		
IN/OUTPUTS		
Assignable outputs (4 avail) Assignable	--	x
Health indication relay	--	x
INPUTs		
General Inputs (4 avail)	--	x
Spring Charged Indication	--	--
Breaker Closed and Connected	--	--
Contact Position Switch	x	x
Status and Diagnostics:		
Trip Target	x	x
Trip Info (Magnitude / Phase)	x	x
Trip Counter	x	x
Event Logger (trips, alarms, I/O)	x	x
Current Alarm Relay based on current level (load shedding)	--	x
Bad Health indication alarms	--	x
Good Health indication relay	--	x
Operation counter	--	--
Main contact maintenance indication	--	--
Hardware Test Interfaces		
24V DC	x	x
110-130V DC or 110-240V AC	x	x
Miscellaneous		
Settings lock / unlock	x	x
Metering		
Current (PH-L1, PH-L2, PH-L3, N)	x	x
Communications		
Modbus 4 wire	--	x

Legend: x = available function
-- = not available

Electrical Requirements

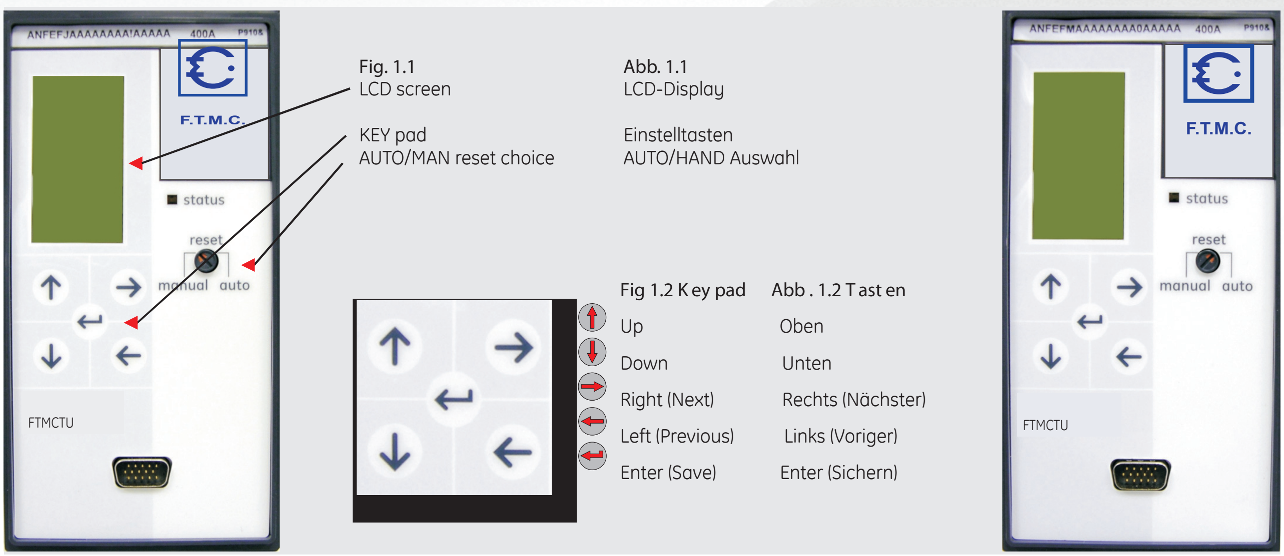
None: Plug in installation. Done on de-energized units.

Equipment Interfaces

Power-WAVE Plus frame 1 & frame 2 Circuit Breakers.

Trip units, for the most part, do not require direct connections to the equipment. All wiring is intended to connect to the circuit breaker or cassette.

Connections that are required for other equipment are the optional input, and relay output, the neutral sensor and the 'Earth leg' CT which uses specifically dedicated connection points on the breaker secondary connection terminals.



OVER CURRENT PROTECTION FUNCTIONS

The Trip Units can provide the following over current protections:

--- Long Time
(Protection against Overload currents) LT
--- Short Time
(Time delayed Protection against Short circuit currents) ST
--- Instantaneous
(Optional Protection against Short circuit currents) I
--- Ground Fault Internal S ummation
(Optional Protection against Ground Fault currents) GFsum
--- Ground Fault CT External Summation
(Optional Protection against Ground Fault currents) GFCt
--- Hi level Instantaneous Override
(Protection against High Short circuit currents) HSIOC
--- Making Current Release
(Protection against closure on a fault) MCR
--- Reduce Let Through Energy Instantaneous
(Optional Protection against Short circuit currents) RELT

A full overview of the installed overcurrent protection devices and other optional features per Trip Unit version is indicated in Tab. 2.0.

2.1 Manual or Automatic reset function

The breaker reset mode can be chosen by a selector switch on the Trip Unit front as indicated in figure 1.1. There are 2 possible positions or configurations. (Figure 1.1: Manual/Automatic selector switch)
1) manual
In this configuration the assembly in the trip unit interlocks with a mechanical lockout functionality of the circuit breaker. When the circuit breaker trips a mechanical interlock changes state.
This Interlock drives a assembly in the trip unit forward so that the depicted button "pops" out from the front of the trip unit. This device also operates an optional Bell Alarm contact mounted in the circuit breaker.
In order to re-close the breaker; the mechanical interlock must be reset by depressing the button on the front of the trip unit. This also resets the Bell Alarm contact in the circuit breaker, if present.
2) auto
In this configuration the assembly in the trip unit is mechanically restrained so that the depicted button does not "pop out" from the front of the trip unit. The optional Bell Alarm contact in the circuit breaker also does not change state.
The breaker can be re-closed (Either manually or using a closing coil) without resetting the button since it is held in the reset position.

2.2 Power requirements

A small amount of power is necessary to energize the liquid crystal display (LCD) during setup, for viewing breaker status and for metering displays.

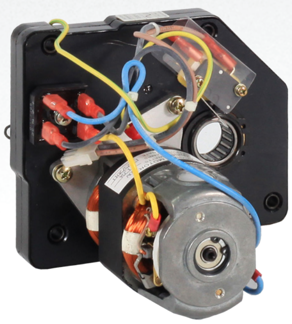
The power sources can be one of the following:
-- Current flow: Breaker current sensors provide sufficient power to energize the LCD when at least 20% of the sensor's ampere rating is flowing.
-- +24 VDC control power

--Test kit Catalogue No. FTCCG TUTK20
The device has a built in 24 VDC control power supply that can be powered up through a standard mains connection.
– The FTCCM50 Trip Unit requires external +24 VDC control power for communication.

ACB Accessories for frame 1 & 2

A wide range of optional accessories have been developed that are compatible with all Power-WAVE Plus air circuit breakers, regardless of nominal rating or Frame size. Each one incorporates 'easy-fit' design features for quick installation, either in the factory or by the user on site.

Motorised spring charging unit



The unique motor/gearbox unit is specially designed to operate with the full rangeof Power-WAVE Plus breakers. It is easily fitted with just three bolts.
In the event of circuit breaker closure, this unit will automatically recharge the spring and makes it ready for instant reclosure should the need arise.
High speed recharging ensures that the springs are fully charged within approximately three seconds following a release.
As an optional feature, a "springs charged" contact is available for the motor unit.

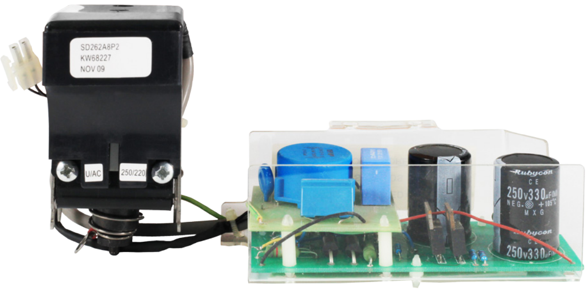
Closing coil

The closing coil is an easy-to-fi t, clip-on unit, with simple plug-in connectors. This permits either local or remote release of the spring charged closing mechanism by electrical operation.
An additional anti-pumping safety feature also ensures that the electrical closing signal must be released before further closure is attempted, and a cut-off is instigated should a closing signal be maintained.
Because each coil operates within a wide voltage range, the number of individually rated coils required is drastically reduced.

Shunt trip

Energisation, locally or remote, will instantaneously activate the circuit breaker mechanism, ensuring rapid disconnection of the main contacts.
In addition, a series connected auxiliary switch ensures automatic isolation whenever the circuit breaker is open.
Shunt trip releases also have a wide operational voltage range, and they include the same easy-fi t, clip-on/plug-in connectors as the closing coil.

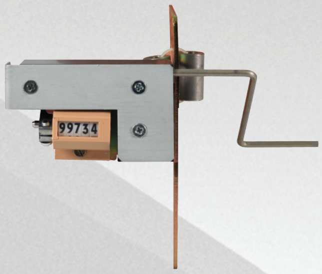
Undervoltage release



Instantaneously releases the circuit breaker trip mechanism when the supply voltage dip below the pre-set value. Simple to install, these devices have the same easy-fit features as previously described.
Note: This is a 'no-volt/no-close device. The circuit breaker cannot be closed (manually or electrically) unless the undervoltage release coil is energized.

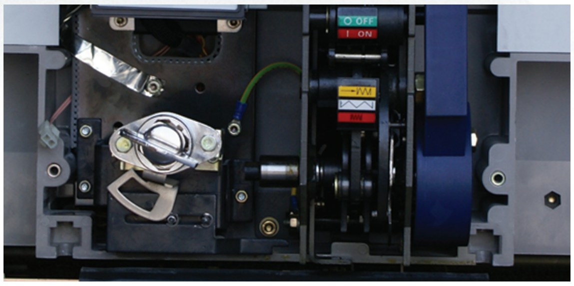
Time delay undervoltage release
Similar to the above, but this electronic device prevents nuisance tripping of the circuit breaker if circuit interruption is not desirable when supply voltage drop is only transient. Fixed time delay
3 sec ± 1 sec.
Due to its principle of action the UV is suitable for emergency stop situations.

Mechanical operation counter



Easily fitted, this useful accessory may be specified for use with either manual or motor charged Power-Wave Plus circuit breakers. It is clearly visible through the front panel, and the counter provides an accurate record of the cumulative number of complete breaker closing operations.

Circuit breaker Key interlock facility



Ready-to-fit interlocking devices such as Castell, Ronis, Profalux and Fortress, for installation between separate circuit breakers, available in kit form. This valuable safeguard ensures that a circuit breaker cannot be closed unless the dedicated key has been inserted and secured within the lock.
Note: Castell, Fortress or Profalux locks and keys cannot be supplied by GE. Please order separately from your local supplier.

Sealed door panel escutcheon

An optional IP54 complete front door panel is available should a higher degree of protection be necessary.
(Only for frame 1 & 2)

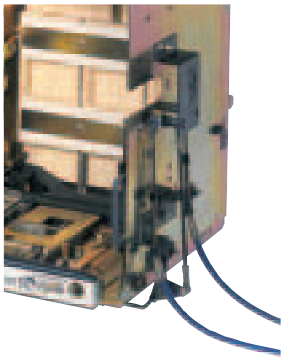
Cassette main terminal adaptors

Type 'N': 65kA rear connection shown above.

Cassette interlock

Available for withdrawable circuit breakers only, this sophisticated interlock system secures the circuit breaker in the disconnected position by means of a Ronis or Profalux key. When the key is removed, the safety shutters are automatically locked in position, thus preventing access to the contacts and also ensuring that the racking mechanism is not operable.

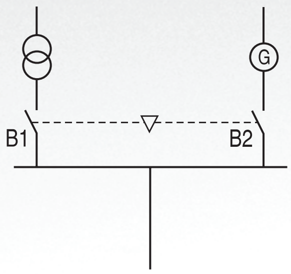
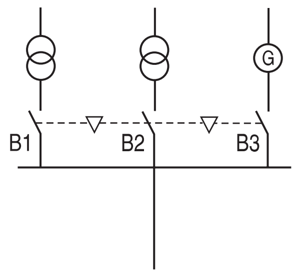
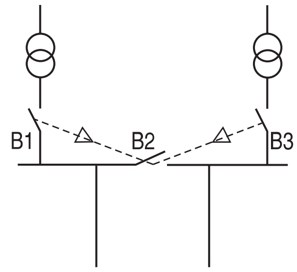
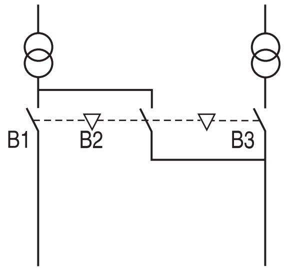
Cable interlocks



Cable interlocking version shown above available for fixed and withdrawable circuit breakers.
These units enable the direct interlocking of Power-Wave Plus circuit breakers, either mounted side by side or stacked. The interlocking mechanisms are connected by a specially designed cable and provides interlocking between the breakers 1 from 2, 1 from 3 and 2 from 3 configurations
Any mix of current ratings / pole configurations can be accommodated.
Standard cable lengths available: 1.0, 1.6, 2.0, 2.5, 3.0, 3.5 and 4.0 meters.
(Please contact our technical customer service department if longer length is required.)

Interlocks

Mechanical interlocks can be fitted to the following electrical systems and can link 2 and/or 3 circuit breakers.
Any nominal rating, frame size, number of poles or type (fixed pattern or withdrawable) can be interlocked.

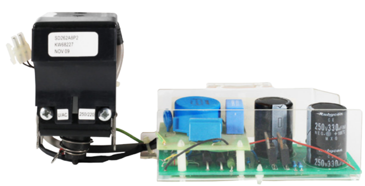
Typical circuit	Interlock configuration	Possible combinations
	**Type A** **1 from 2 way interlock** 2 cable configuration Interlocking between 2 circuit breakers. 1 normal power supply 1 generator (emergency) supply	B1 | B2 0 | 0 I | 0 0 | I Circuit breaker B1 can only close if B2 is open Circuit breaker B2 can only close if B1 is open
	**Type B** **1 from 3 way interlock** 6 cable configuration Interlocking between 3 circuit breakers. 3 power supplies (generator or transformers) feeding the same busbar but parallel operation is prevented.	B1 | B2 | B3 0 | 0 | 0 I | 0 | 0 0 | I | 0 0 | 0 | I Only 1 from 3 breakers can be closed
	**Type C** **2 from 3 way interlock** 6 cable configuration Interlocking between 3 circuit breakers. 2 bus sections can be powered by a single transformer (bus coupler closed) or by both transformers (bus coupler open).	B1 | B2 | B3 0 | 0 | 0 I | 0 | 0 0 | 0 | I 0 | I | 0 I | I | 0 0 | I | I I | 0 | I Any 2 from 3 breakers can be closed Any 1 from 3 breakers can be closed 2 breakers must be closed to prevent the 3rd breaker from closing
	**Type D** **1 from 3 way interlock variant** 4 cable configuration (2 cables for bus coupler) Interlocking between 3 circuit breakers. 2 normal power supplies not set in parallel 1 power supply may assist the priority circuit	B1 | B2 | B3 0 | 0 | 0 I | 0 | 0 0 | 0 | I I | 0 | I 0 | I | 0 Circuit breaker B1 and/or B3 can be closed only if B2 is open Circuit breaker B2 can only be closed if B1 & B3 are both open

Accessories Performance Data

		Operating voltage (V)		Operating range	Power consumption		Rating
		AC	DC		VA max.	Watt max.	(Amps resistive)
Auxiliary and carriage swtich	Frame 1 & 2	250		-	-	-	10
			125	-	-	-	5
			250	-	-	-	0.25
Carriage switch	Frame 3	400		-	-	-	10
			110	-	-	-	6
Motor operator	Frame 1 & 2	220 - 250	220 - 250	0.85 to 1.1 times rated voltage	-	-	-
		110 - 127	110 - 127		-	-	-
			42 - 48		-	350	-
			24 - 30		-	-	-
Closing coil	Frame 1 & 2	220 - 250	220 - 250	0.85 to 1.1 times rated voltage			-
		110 - 130	110 - 130				-
			40 - 48			410	-
			24 - 30				-
Shunt trip	Frame 1 & 2	220 - 250	220 - 250	0.70 to 1.1 times rated voltage			-
		110 - 130	110 - 130				-
			40 - 48			410	-
			24 - 30				-
Instantanious undervoltage release	Frame 1 & 2	380 - 440	110 - 130	-			-
		220 - 250	42 - 48	-		400	-
		110 - 130	24 - 30	-			-
							-
							-
							-
							-
							-
							-
							-
							-
Auxiliary power unit	Frame 1 & 2	95 - 265	24 - 264	-	-	12	-

Frame 1 & 2

Electrical accessories



FTCCMP RO optional features		Range	Voltage	Cat. No.	Ref. No.
Shunt trip (ST)		24/30V	DC	FTCCST30	F101378
		48V	DC	FTCCST48	F101379
		110/130V	AC/DC	FTCCST130	F101380
		220/250V	AC/DC	FTCCST250	F101381
		380/440V	AC/DC	FTCCST440	F101382
Motor operator (MOP)		24/30V	DC	FTCCMOP30	F101383
		48V	DC	FTCCMOP48	F101384
		110/130V	AC	FTCCMOP130A	F101385
		110/130V	DC	FTCCMOP130D	F101386
		220/250V	AC/DC	FTCCMOP250A	F101387
Closing coil (CC)		24/30V	DC	FTCCC C30	F101388
		48V	DC	FTCCC C48	F101389
		110/130V	AC/DC	FTCCC C130	F101390
		220/250V	AC/DC	FTCCC C250	F101391
Under voltage release (UV)		24/30V	DC	FTCCUV30	F101392
		48V	DC	FTCCUV48	F101393
		110/130V	AC	FTCCUV130A	F101394
		110/130V	DC	FTCCUV130D	F101395
		220/250V	AC	FTCCUV250	F101396
		380/440V	AC	FTCCUV440	F101397
Under voltage release time delayed (UVTD)		48V	DC	FTCCU VTD48	F101398
		110/130V	AC	FTCCU VTD130	F101399
		220/250V	AC	FTCCU VTD250	F101400
		380/440V	AC	FTCCU VTD440	F101401
Carriage switch	Factory fitted	250V	AC/DC	FTCCCSWFF	F101402
	Loose kit form	250V	AC/DC	FTCCCSWL	F101403
Springs charged signal (x 1 n/o)				FTCCS CC	F101404
Springs charged contact (x 1 c/o)				FTCC2WPFC	F101405
Trip circuit supervision (shunt trip required)				FTCCTRI PCS	F101406

Rear connections

Frame size	Rating (A)	Poles	Withdrawable or cassettes			Fixed pattern		
			Cat. No.	Ref. No.	Type	Cat. No.	Ref. No.	Type
1	400 to 1600	3	FTCCR T1HOR	F101407	Horizontal	FTCCR T1SVFIX	F101415	Vertical
		4	FTCCR T1HOR	F101408	Horizontal	FTCCR T1SVFIX	F101416	Vertical
1	400 to 1600	3	FTCCR T1VER	F101409	Vertical	-	-	-
		4	FTCCR T1VER	F101410	Vertical	-	-	-
1	2000 &	3	FTCCR T1UNI	F101411	Universal	FTCCR T1SNVFIX	F101417	Vertical
	2500	4	FTCCR T1UNI	F101412	Universal	FTCCR T1SNVFIX	F101418	Vertical
2		3	FTCCR T2UNI	F101413	Universal	FTCCR T2SNHVFIX	F101419	Vertical
	800 to 3200	4	FTCCR T2UNI	F101414	Universal	FTCCR T2SNHVFIX	F101420	Vertical
2		3	N/A	N/A	Vertical	FTCCR T2SNHVFIX	F101421	Vertical
	4000	4	N/A	N/A	Vertical	FTCCR T2SNHVFIX	F101422	Vertical

Rear Connections specified in multiples of 3, 4, 6 or 8 dependant on 3 or 4 pole configuration - top and / or bottom connections.

Frame 1, 2

Type A: order 1 interlock kit and 1 cable per ACB
Type B: order 1 interlock kit and 2 cable per ACB
Type C: order 1 interlock kit and 2 cable per ACB
Type D: order 1 interlock kit and 1 cable per **Supply** breaker plus 1 interlock kit for the **Control** breaker and 2 cables
For type D configuration 2 Supply Breakers and one Control Breaker are required.

Mechanical accessories

2 way Interlocking			Type A - 2 way interlock / Cable		Type B - 1 from 3 way interlock / Cable	
Frame size	Version	Poles	Cat. No.	Ref. No.	Cat. No.	Ref. No.
1	Withdrawable	3	FTC2 WCI3PW	F101423	FTCCB13 WCI3PW	F101433
		4	FTC2 WCI4PW	F101424	FTCCB13 WCI4PW	F101434
	Fixed	3	FTC2 WCI3PF	F101425	FTCCB13 WCI3PF	F101435
		4	FTC2 WCI4PF	F101426	FTCCB13 WCI4PF	F101436
2	Withdrawable	3	FTC2 WCIF23PW	F101427	FTCCB13 WCIF23PW	F101437
		4	FTC2 WCIF24PW	F101428	FTCCB13 WCIF24PW	F101438
	Fixed	3	FTC2 WCIF23PF	F101429	FTCCB13 WCIF23PF	F101439
		4	FTC2 WCIF24PF	F101430	FTCCB13 WCIF24PF	F101440

			Type C - 2 from 3 way interlock / Cable	
Frame size	Version	Poles	Cat. No.	Ref. No.
1	Withdrawable	3	FTCC2WCI3PW	F101441
		4	FTCC2WCI4PW	F101442
	Fixed	3	FTCC2WCI3PF	F101443
		4	FTCCC23 WCI4PF	F101444
2	Withdrawable	3	FTCCC23WCIF23PW	F101445
		4	FTCCC23WCIF24PW	F101446
	Fixed	3	FTCCC23WCIF23PF	F101447
		4	FTCCC23WCIF24PF	F101448

			Type D - 1 from 3 way interlock/cable - Supply Breakers		Type D - 1 from 3 way interlock/cable - Control Breaker	
Frame size	Version	Poles	Cat. No.	Ref. No.	Cat. No.	Ref. No.
1	Withdrawable	3	FTCCD13 WCI3PW	F101449	FTCCD13 WCI3PWCON	F101457
		4	FTCCD13 WCI4PW	F101450	FTCCD13 WCI4PWCON	F101458
	Fixed	3	FTCCD13 WCI3PF	F101451	FTCCD13 WCI3PFCON	F101459
		4	FTCCD13 WCI4PF	F101452	FTCCD13 WCI4PFCON	F101460
2	Withdrawable	3	FTCCD13 WCIF23PW	F101453	FTCCD13 WCIF23PWCON	F101461
		4	FTCCD13 WCIF24PW	F101454	FTCCD13 WCIF24PWCON	F101462
	Fixed	3	FTCCD13 WCIF23PF	F101455	FTCCD13 WCIF23PFCON	F101463
		4	FTCCD13 WCIF24PF	F101456	FTCCD13 WCIF24PFCON	F101464

Cable for interlock (for Frame 1 & 2 only)

Length	Cat. No.	Ref. No.(1)
1.0 metre	FTCC100BCMCI	F101465
1.6 metre	FTCC160BCMCI	F101466
2.0 metre	FTCC200BCMCI	F101467
2.5 metre	FTCC250BCMCI	F101468
3.0 metre	FTCC300BCMCI	F101469
3.5 metre	FTCC350BCMCI	F101470
4.0 metre	FTCC400BCMCI	F101471

(1) Reference is for one cable

Frame 1, 2

Interlocks

Frame size	Item	Cat. No.	Ref. No.
1, 2	Castell key breaker interlock (supplied loose) (1)	FTCCCASLOK	F101472
	Fortress key breaker interlock (supplied loose) (1)	FTCCFORLOK	F101473
	Profalux key breaker interlock (supplied loose) (1)	FTCCPROLOK	F101474
	Profalux key cassete interlock (supplied loose) (1)	FTCCPROCAS	F101475
	Ronis key breaker interlock (factory fitted) (2)	FTCCRONLKEY	F101476
	Ronis key breaker interlock (supplied loose) (2)	FTCCRONWKEY	F101477
	Ronis key breaker interlock (supplied loose) (1)	FTCCRONLOK	F101478
	Ronis key cassete interlock (factory fitted) (2)	FTCCRONWKEYFF	F101479
	Ronis key cassete interlock (supplied loose) (2)	FTCCRONCASLD	F101480
	Ronis key cassete interlock (supplied loose) (1)	FTCCRONCASNK	F101481
	Ronis key cassete interlock (factory fitted) (1)	FTCCRONCAS	F101482

Miscellaneous

Frame size	Item	Cat. No.	Ref. No.
1, 2	Operations counter	FTCCMOC	F101487
	Left hand door interlock - hinged right	FTCCDILHS	F101488
	Right hand door interlock - hinged left	FTCCDIRHS	F101489
	Mis-insertion device (factory fitted)	FTCCACBMID	F101490
	Mis-insertion device (supplied loose)	FTCCACBMIL	F101491
	IP54 door	FTCCIP54DOOR	F101492
	Handling (lifting) truck	FTCCACBLIFT	F101493
	Spare or replacement racking handle	FTCCMPRACKHAN	F101494

(1) Without lock and key
(2) With lock and key

Frame 1, 2

Spare parts

Neutral / Earth leg (4th) Current transformer with mounting kit | **Neutral (4th) Rogowski coil with mounting kit**

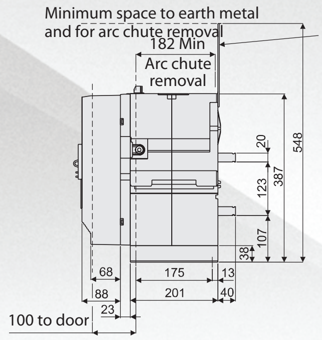
Frame size	Rating (A)	Current transformer Cat. No.	Current transformer Ref. No.	Rogowski coil (1) Cat. No.	Rogowski coil (1) Ref. No.
1	800	FTCCELCT8001	F101496	FTCCRCMK8001	F101510
2		FTCCELCT8002	F101497	FTCCRCMK8002	F101511
1	1000	FTCCELCT10001	F101498	FTCCRCMK10001	F101512
2		FTCCELCT10002	F101499	FTCCRCMK10002	F101513
1	1250	FTCCELCT12501	F101500	FTCCRCMK12501	F101514
2		FTCCELCT12502	F101501	FTCCRCMK12502	F101515
1	1600	FTCCELCT16001	F101502	FTCCRCMK16001	F101516
2		FTCCELCT16002	F101503	FTCCRCMK16002	F101517
1	2000	FTCCELCT20001	F101504	FTCCRCMK20001	F101518
2		FTCCELCT20002	F101505	FTCCRCMK20002	F101519
1	2500	FTCCELCT25001	F101506	FTCCRCMK25001	F101520
2		FTCCELCT25002	F101507	FTCCRCMK25002	F101521
2	3200	FTCCELCT32002	F101508	FTCCRCMK32002	F101522
2	4000	FTCCELCT40002	F101509	FTCCRCMK40002	F101523

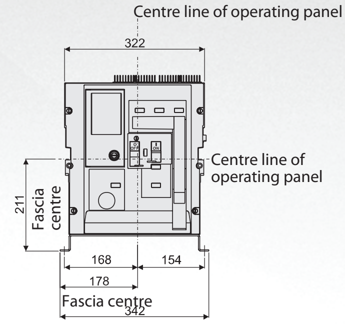
Spare items available as SINGLE unit ONLY

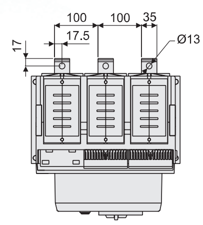
Horizontal, Rear Access Connection

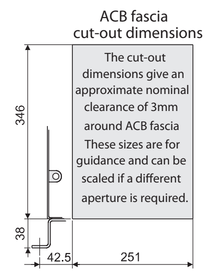
Fixed pattern

Type S - 3 pole - Frame size 1, In = 400A to 1600A



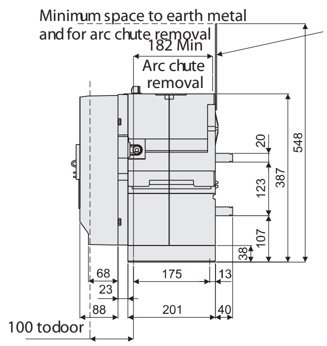


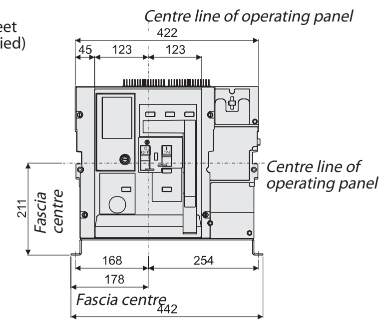


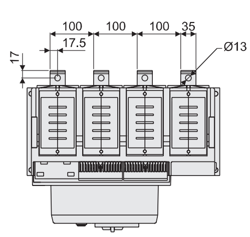


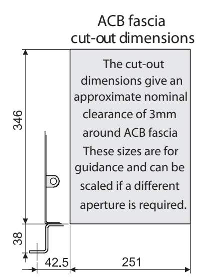
Copperwork must be supported within 200 mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Type S - 4 pole - Frame size 1, In = 400A to 1600A







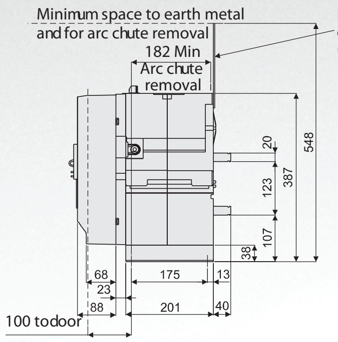


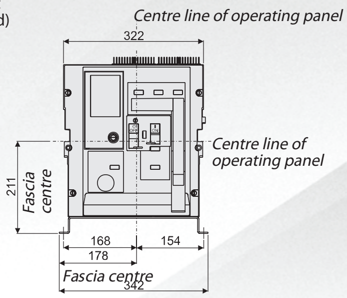
Copperwork must be supported within 200mm of breaker connections-bussbar or cables.
All connections to be tightened to 50Nm.

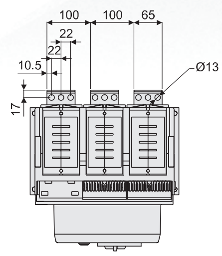
Horizontal, Rear Access Connection

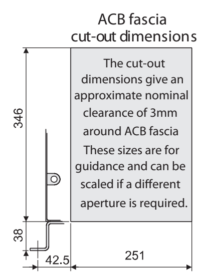
Fixed pattern

Type S - 3 pole - Frame size 1, In = 2000A and 2500A



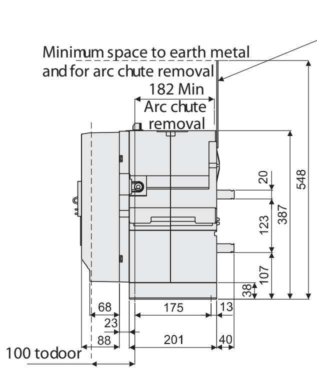


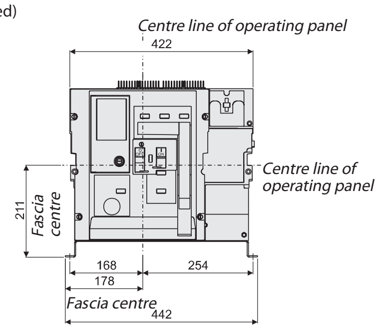


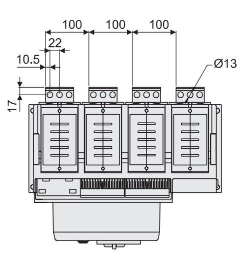


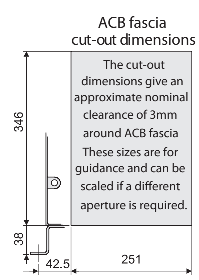
Copperwork must be supported within 200 mm of
breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Type S - 4 pole - Frame size 1, In = 2000A and 2500A







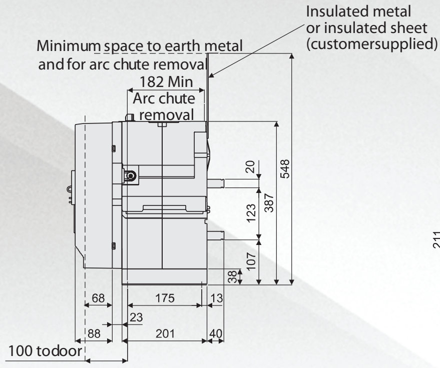


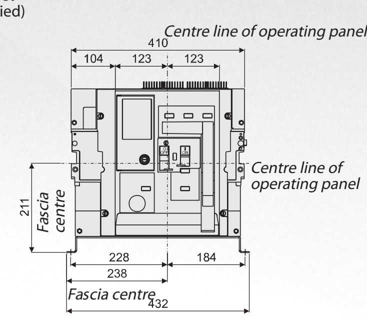
Copperwork must be supported within 200 mm of
breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

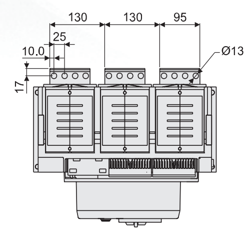
Horizontal, Rear Access Connection

Fixed pattern

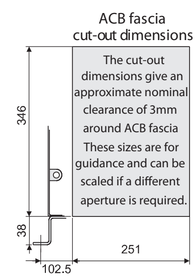
Type S - 3 pole - Frame size 2, In = 2000A to 4000A



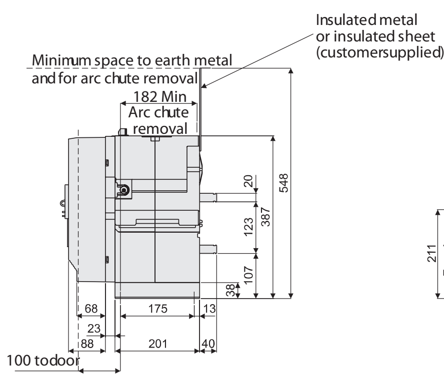


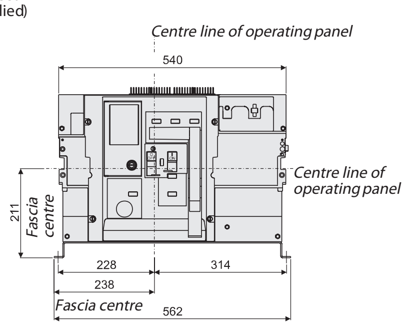


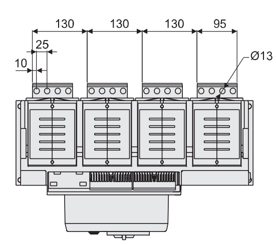
Copperwork must be supported within 200 mm of
breaker connections – busbars or cables.
All connections to be tightened to 50Nm.



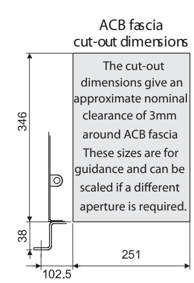
Type S - 4 pole - Frame size 2, In = 2000A to 4000A



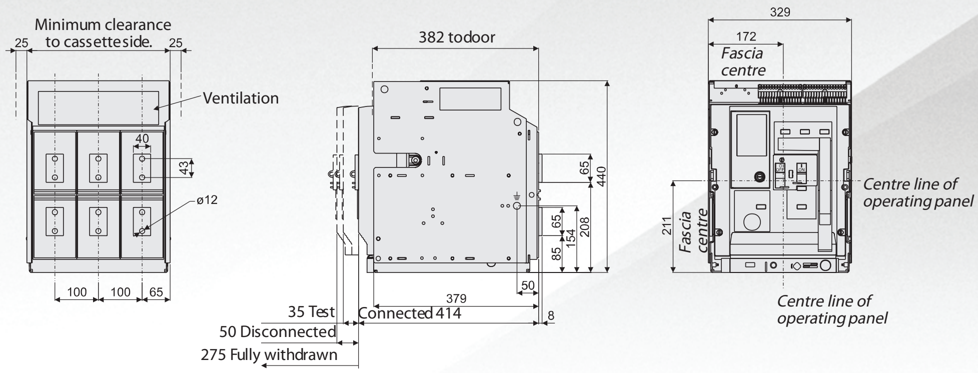


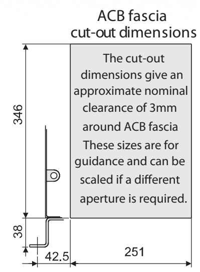


Copperwork must be supported within 200 mm of
breaker connections – busbars or cables.
All connections to be tightened to 50Nm.



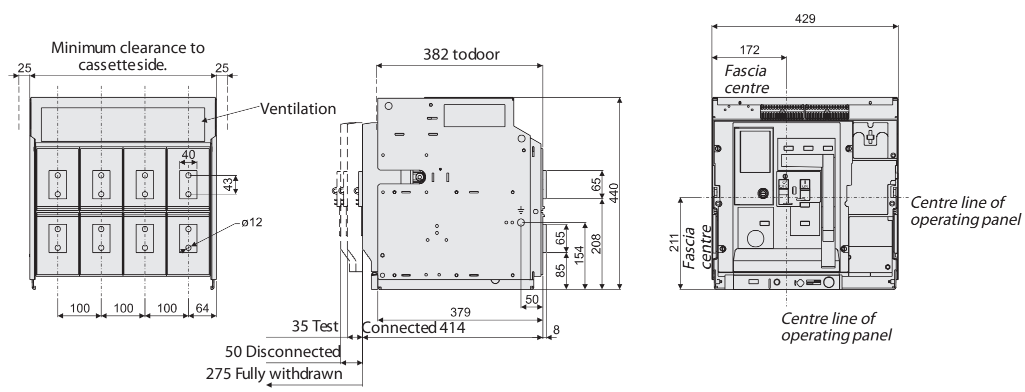
Type S - 3 pole - Frame size 1, In = 400A to 1600A

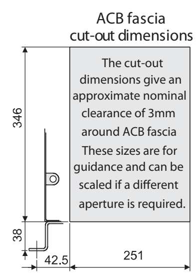




Copperwork must be supported within 200 mm of breaker connections-bussbar cables
All connections to be tightened to 50Nm
Captive plated behind copper terminal, tapped M10 x 1.56H.
Minimum insertion of screw 16mm. Maximum insertion of screw 34mm.

Type S - 4 pole - Frame size 1, In = 400A to 1600A



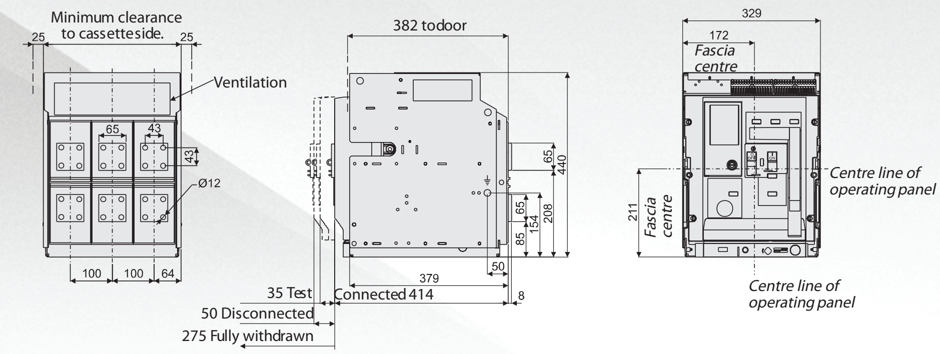


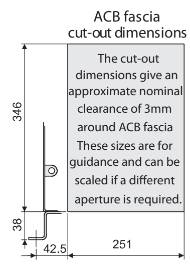
Copperwork must be supported within 200 mm of breaker connections-bussbar cables
All connections to be tightened to 50Nm
Captive plated behind copper terminal, tapped M10 x 1.56H.
Minimum insertion of screw 16mm. Maximum insertion of screw 34mm.

Rear Access Connection

Withdrawable pattern

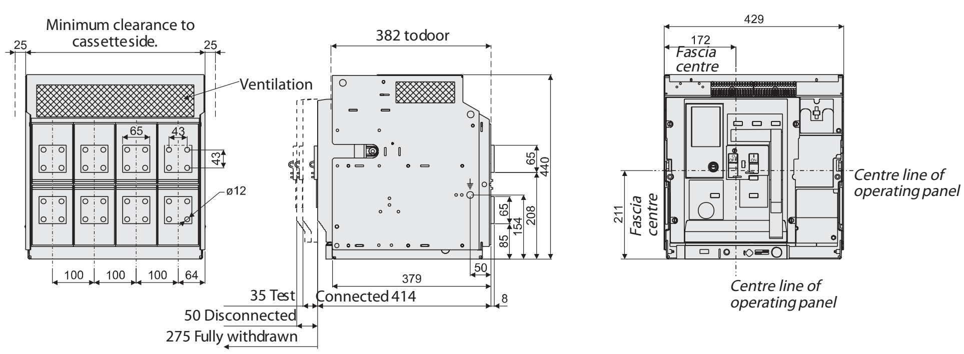
Type S - 3 pole - Frame size 1, In = 2000A & 2500A

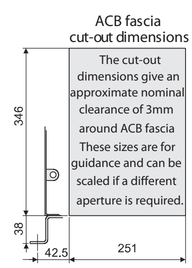




Copperwork must be supported within 200 mm of breaker connections-bussbar cables
All connections to be tightened to 50Nm
Captive plated behind copper terminal, tapped M10 x 1.56H.
Minimum insertion of screw 16mm. Maximum insertion of screw 34mm.

Type S - 4 pole - Frame size 1, In = 2000A & 2500A



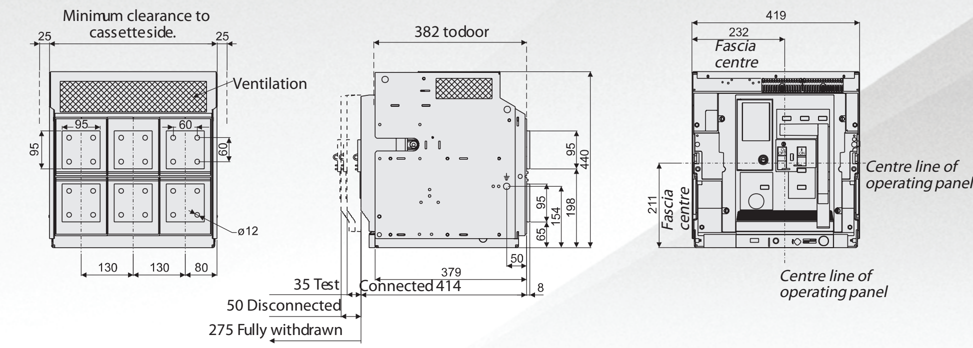


Copperwork must be supported within 200 mm of breaker connections-bussbar cables
All connections to be tightened to 50Nm
Captive plated behind copper terminal, tapped M10 x 1.56H.
Minimum insertion of screw 16mm. Maximum insertion of screw 34mm.

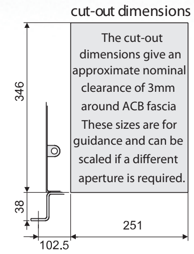
Rear Access Connection

Withdrawable pattern

Type S - 3 pole - Frame size 2, In = 2000A to 3200A

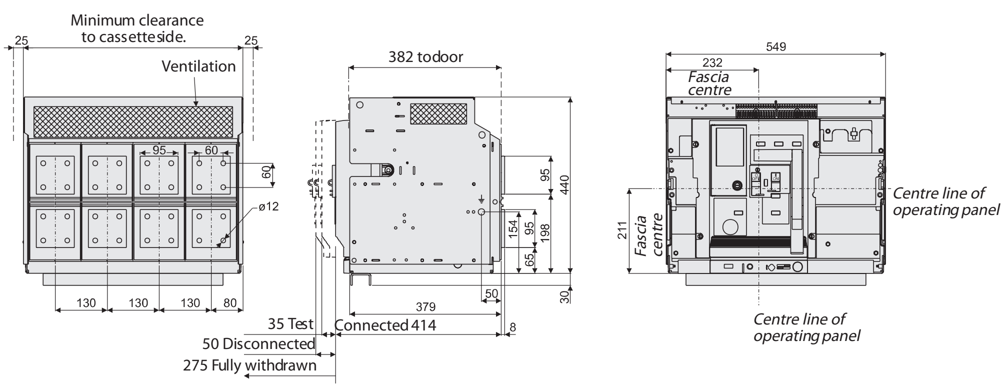


ACB fascia
cut-out dimensions

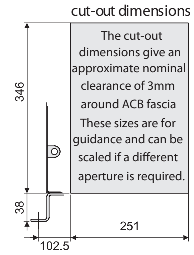


Copperwork must be supported within 200 mm of breaker connections-bussbar cables
All connections to be tightened to 50Nm
Captive plated behind copper terminal, tapped M10 x 1.56H.
Minimum insertion of screw 16mm. Maximum insertion of screw 34mm.

Type S - 4 pole - Frame size 2, In = 2000A to 3200A



ACB fascia
cut-out dimensions

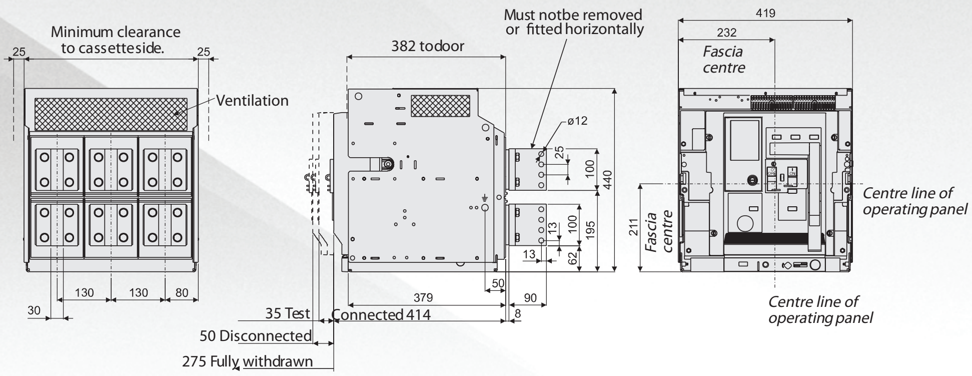


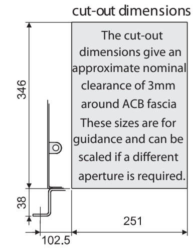
Copperwork must be supported within 200 mm of breaker connections-bussbar cables
All connections to be tightened to 50Nm
Captive plated behind copper terminal, tapped M10 x 1.56H.
Minimum insertion of screw 16mm. Maximum insertion of screw 34mm.

Rear Access Connection

Withdrawable pattern

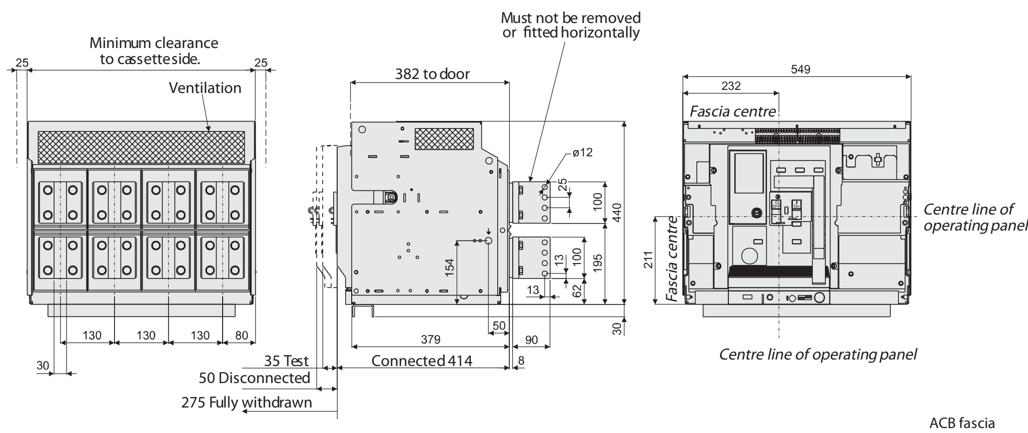
Type S - 3 pole - Frame size 2, In = 4000A

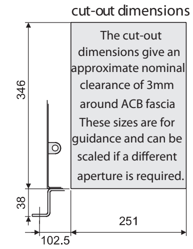




Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Type S - 4 pole - Frame size 2, In = 4000A



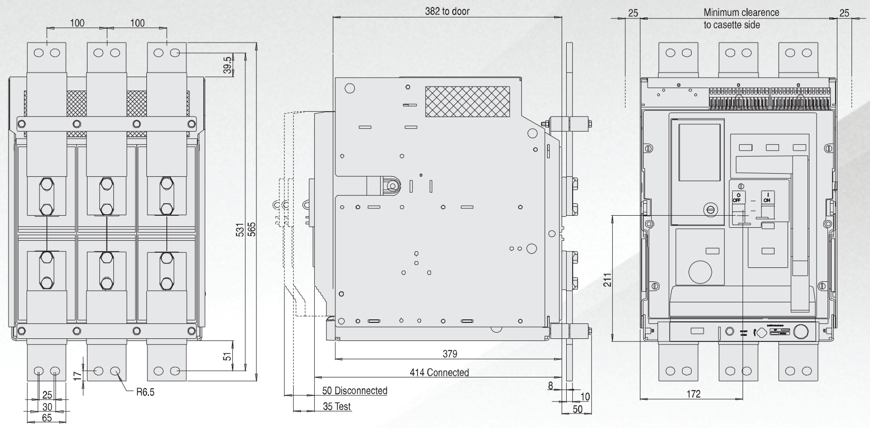


Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

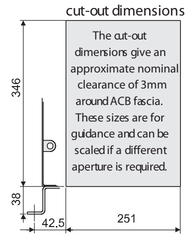
Rear Access Connection

Withdrawable pattern

Type S - 3 pole - Frame size 1, In = 400A to 1600A

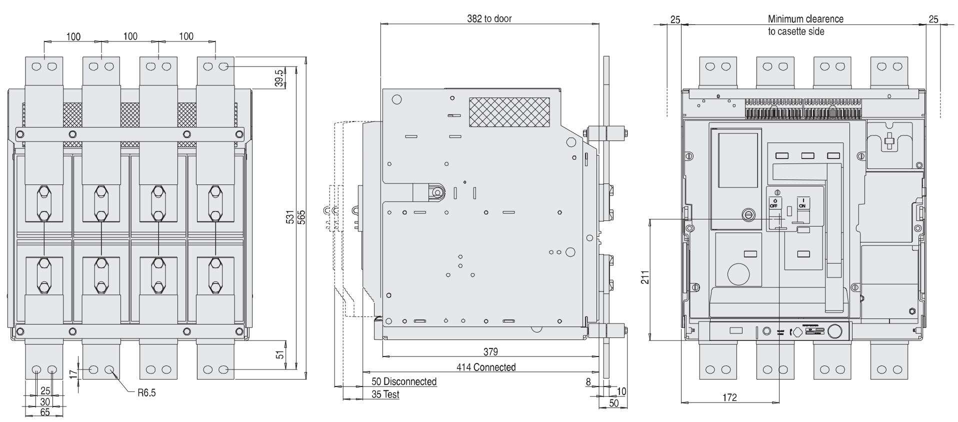


ACB fascia
cut-out dimensions

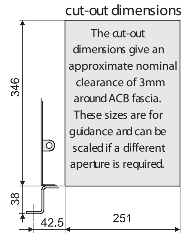


Copperwork must be supported within 200 mm of breaker connections - busbar or cables.
All connections to be tightened to 50 Nm.

Type S - 4 pole - Frame size 1, In = 400A to 1600A



ACB fascia
cut-out dimensions

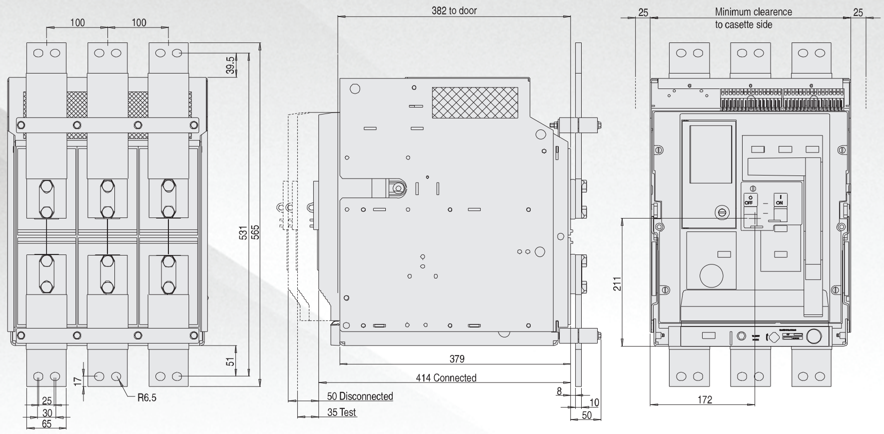


Copperwork must be supported within 200 mm of breaker connections - busbar or cables.
All connections to be tightened to 50 Nm.

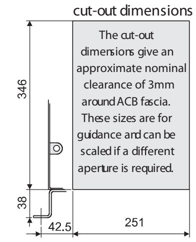
Front Access Connection

Withdrawable pattern

Type S - 3 pole - Frame size 1, In = 2000A & 2500A

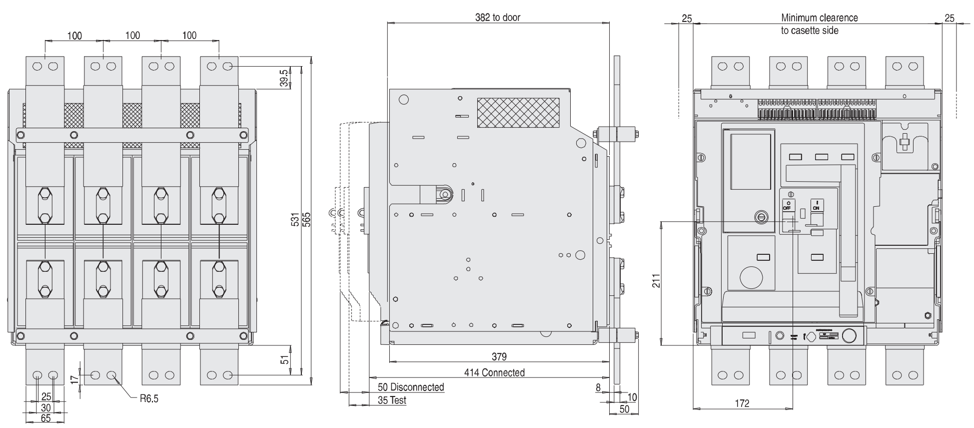


ACB fascia
cut-out dimensions

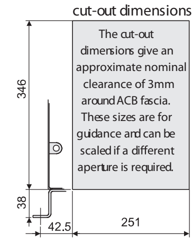


Copperwork must be supported within 200 mm of breaker connections - busbar or cables.
All connections to be tightened to 50 Nm.

Type S - 4 pole - Frame size 1, In = 2000A & 2500A



ACB fascia
cut-out dimensions

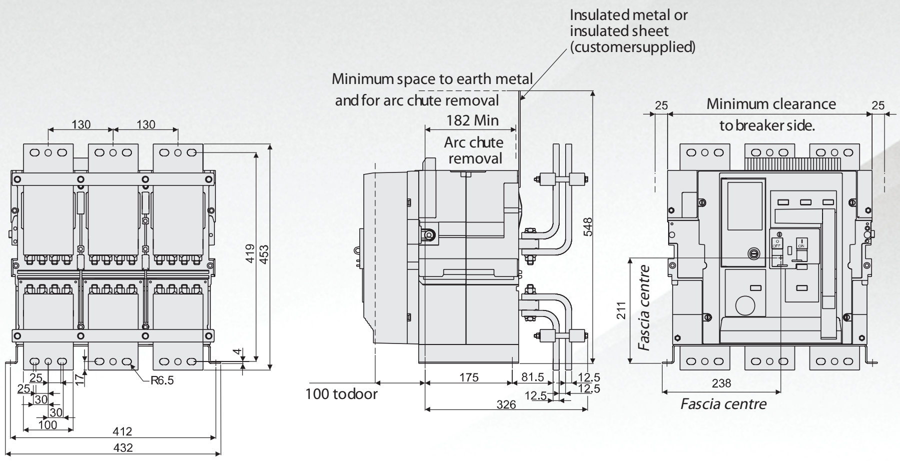


Copperwork must be supported within 200 mm of breaker connections - busbar or cables.
All connections to be tightened to 50 Nm.

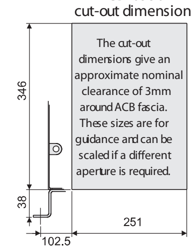
Front access connection

Fixed pattern

Type S - 3 pole - Frame size 2, In = 2000A & 4000A

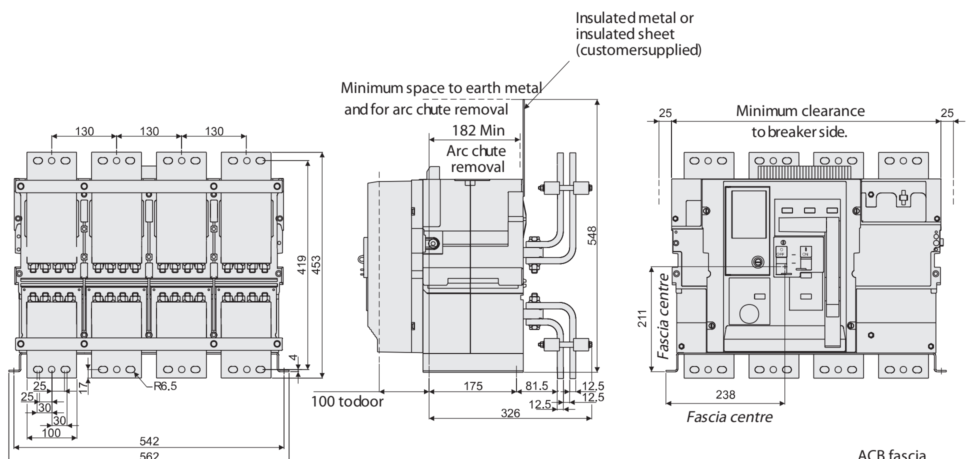


ACB fascia
cut-out dimension

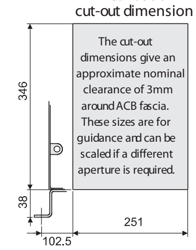


Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Type S - 4 pole - Frame size 2, In = 2000A & 4000A



ACB fascia
cut-out dimension

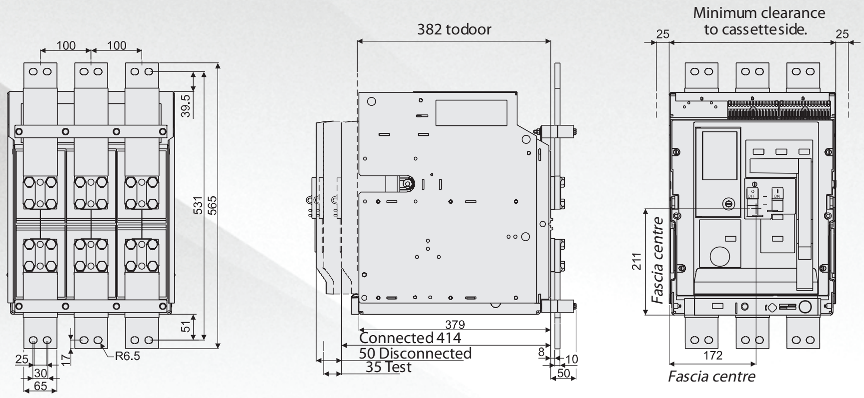


Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

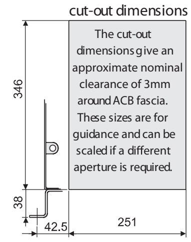
Front Access Connection

Withdrawable pattern

Type S - 3 pole - Frame size 1, In = 400A to 2500A

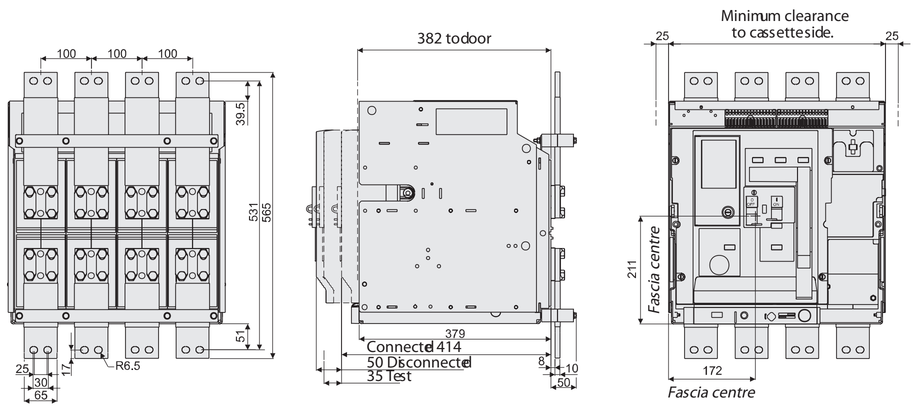


ACB fascia
cut-out dimensions

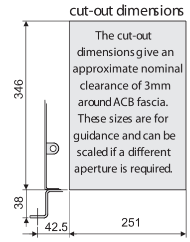


Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Type S - 4 pole - Frame size 1, In = 400A to 2500A



ACB fascia
cut-out dimensions

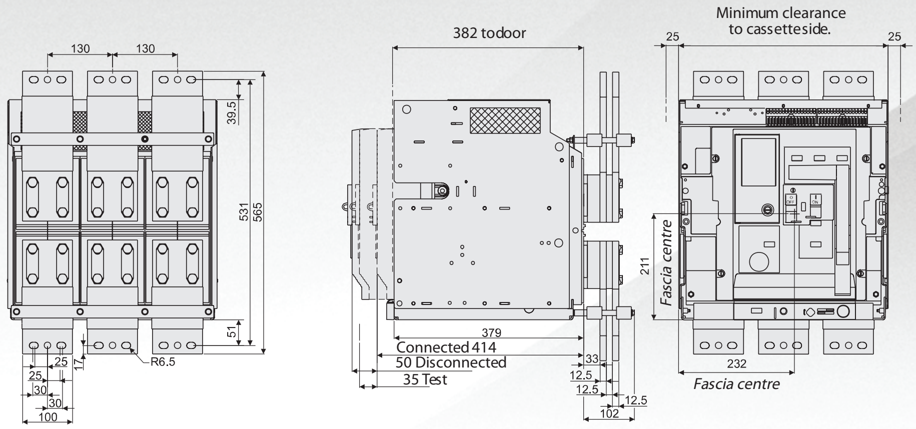


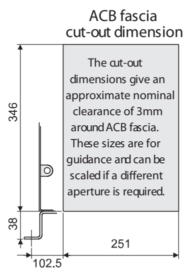
Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Front access connection

Withdrawable pattern

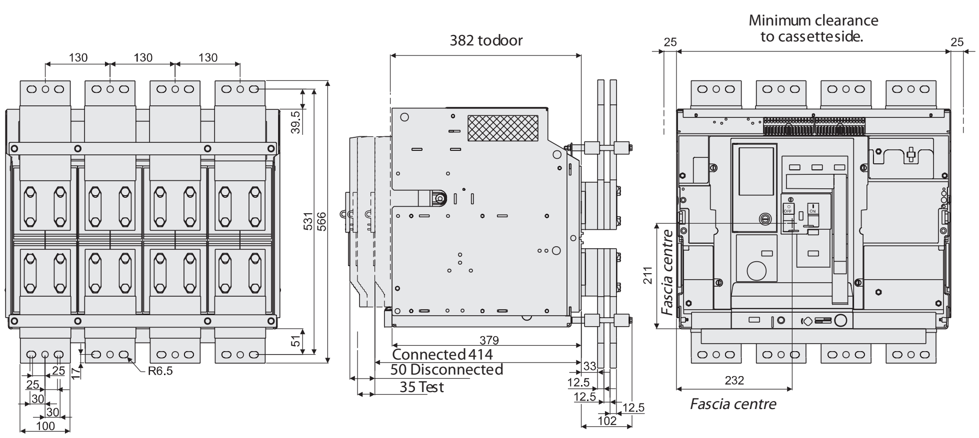
Type S - 3 pole - Frame size 2, In = 2000A & 4000A

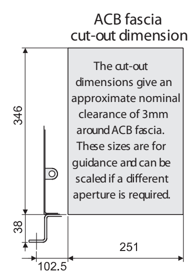




Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Type S - 4 pole - Frame size 2, In = 2000A & 4000A



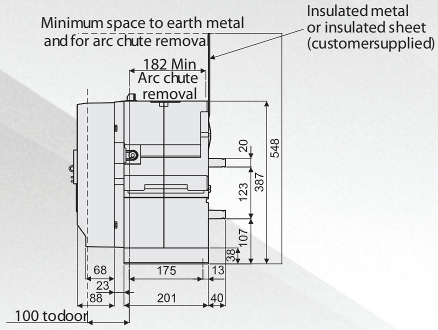


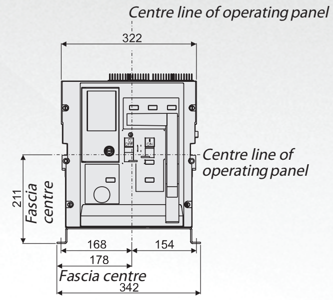
Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

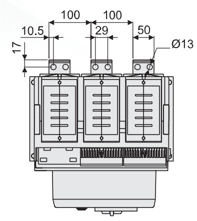
Horizontal, Rear Access Connection

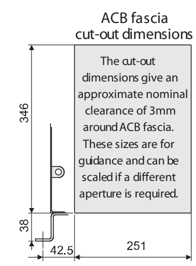
Fixed pattern

Type N - 3 pole - Frame size 1, In = 400A to 1600A



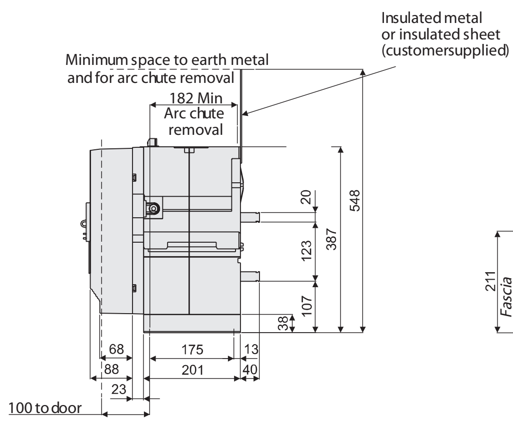


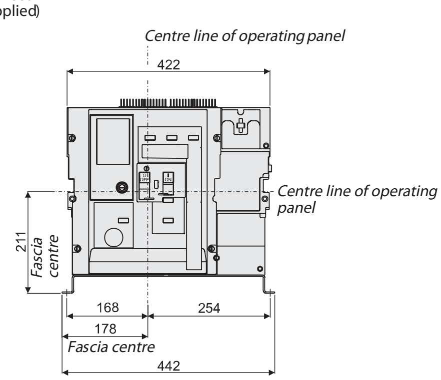


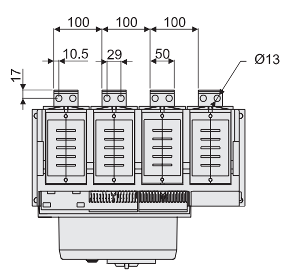


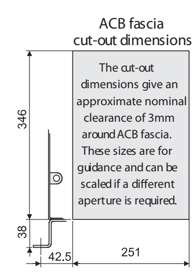
Copperwork must be supported within 200mm of
breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Type N - 4 pole - Frame size 1, In = 400A to 1600A







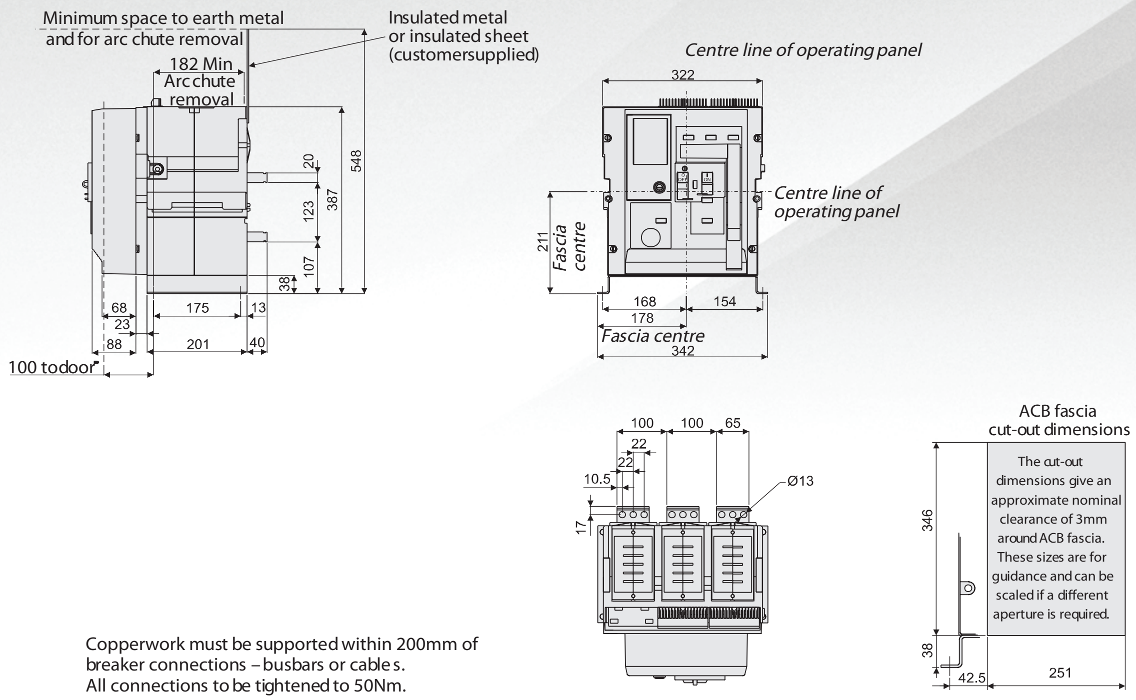


Copperwork must be supported within 200mm of
breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Horizontal, Rear Access Connection

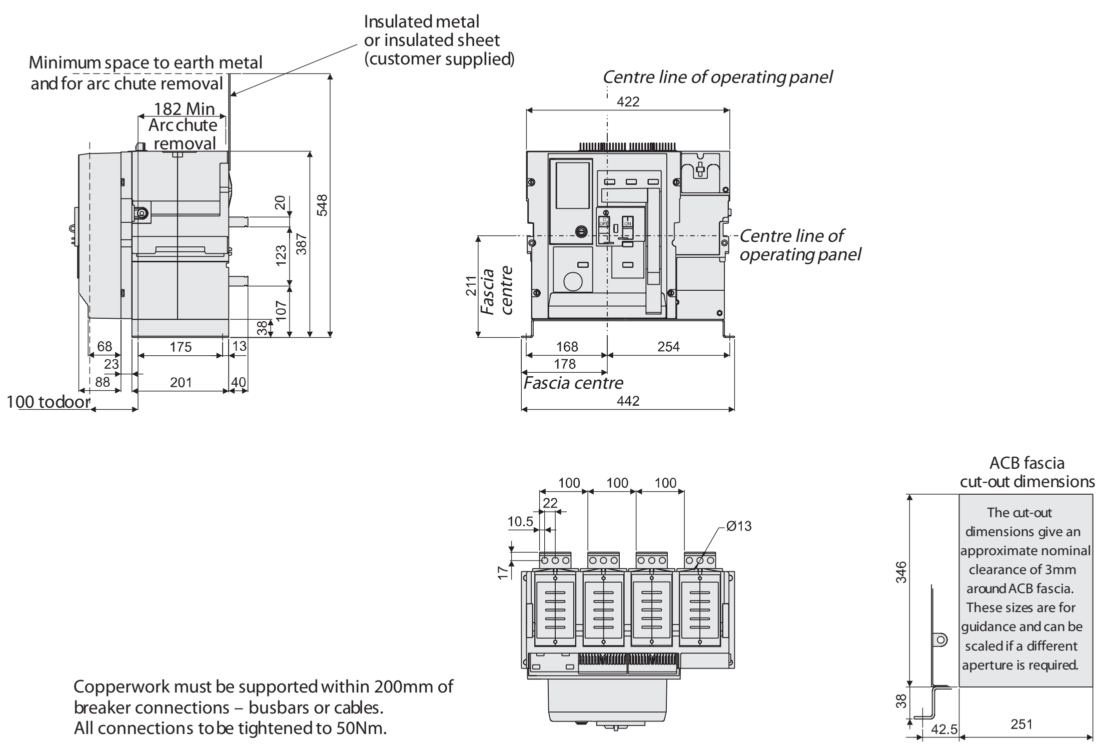
Fixed pattern

Type N - 3 pole - Frame size 1, In = 2000A and 2500A



Copperwork must be supported within 200mm of
breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Type N - 4 pole - Frame size 1, In = 2000A and 2500A



Copperwork must be supported within 200mm of
breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

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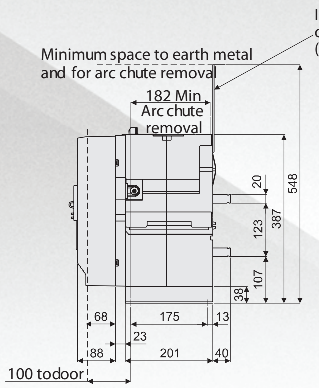
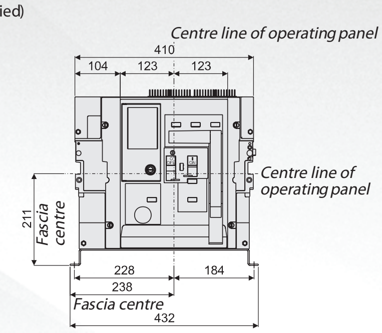
Air Circuit Breakers

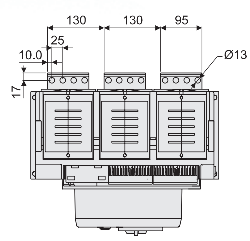
Horizontal, Rear Access Connection

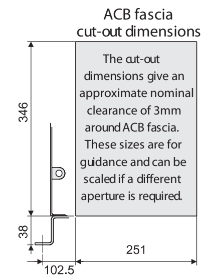
Fixed pattern

Type N - 3 pole - Frame size 2, In = 2000A to 4000A



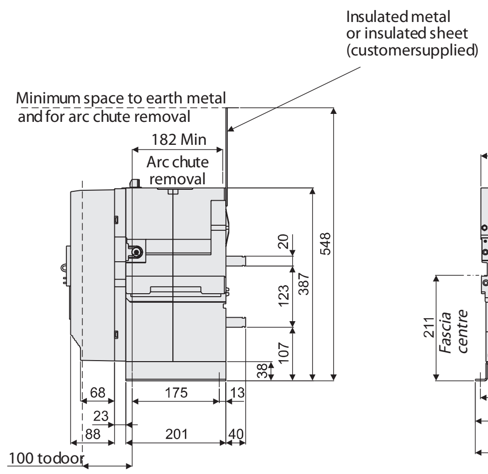


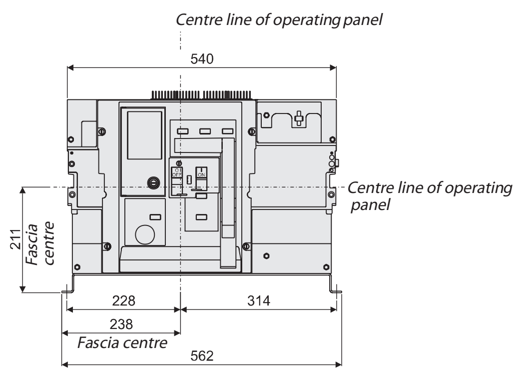


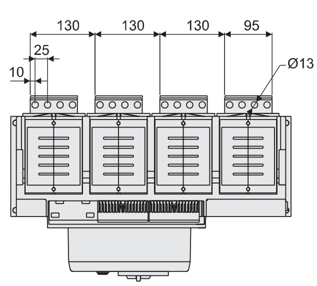


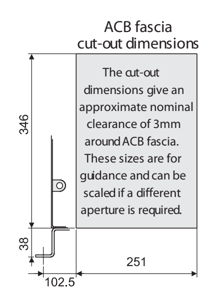
Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Type N - 4 pole - Frame size 2, In = 2000A to 4000A







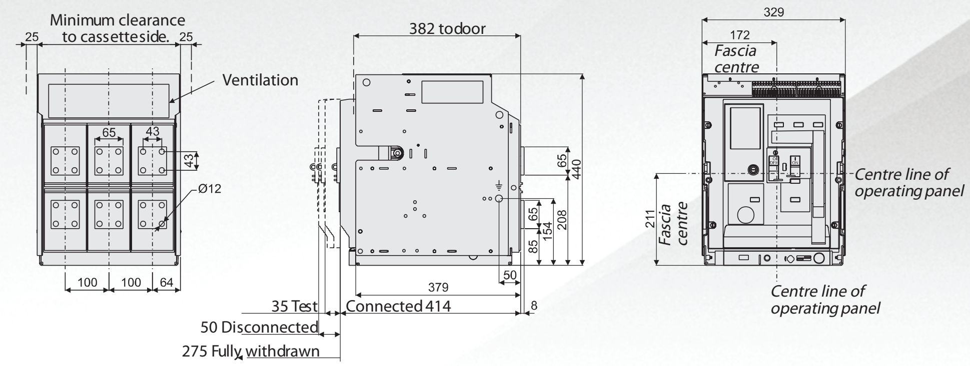


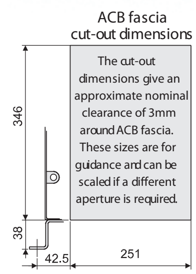
Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Rear Access Connection

Withdrawable pattern

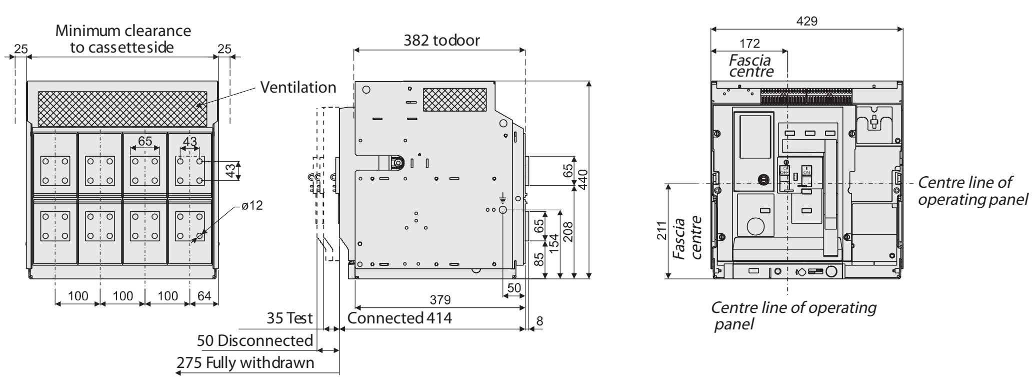
Type N - 3 pole - Frame size 1, In = 400A to 2500A

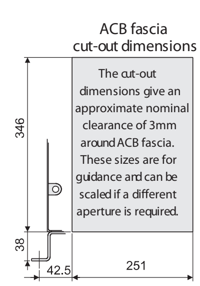




Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.
Captive plate behind copper terminal, tapped M10 x 1.5 6H.
Minimum insertion of screw 16mm. Maximum insertion of screw 34mm.

Type N - 4 pole - Frame size 1, In = 400A to 2500A



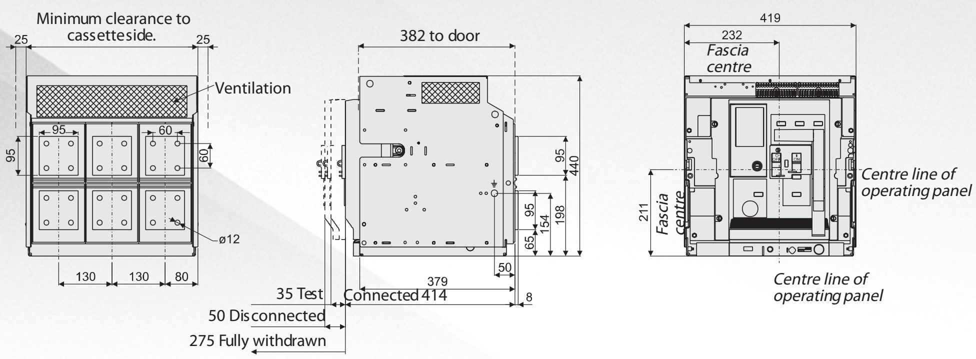


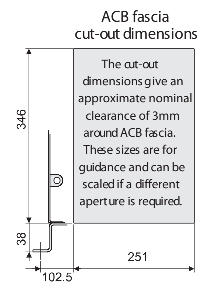
Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.
Captive plate behind copper terminal, tapped M10 x 1.5 6H.
Minimum insertion of screw 16mm. Maximum insertion of screw 34mm.

Rear Access Connection

Withdrawable pattern

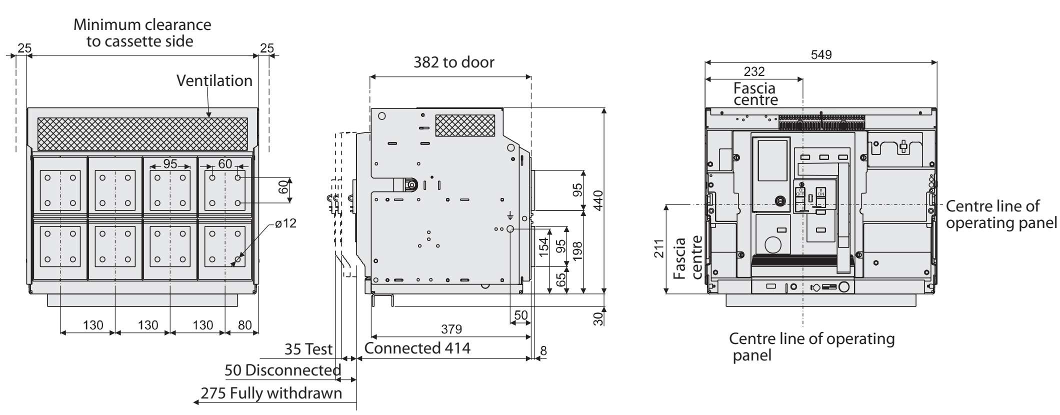
Type N - 3 pole - Frame size 2, In = 2000A to 3200A

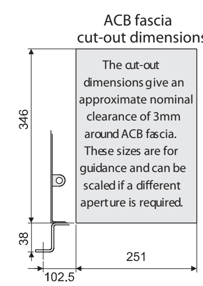




Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.
Captive plate behind copper terminal, tapped M10 x 1.5 6H.
Minimum insertion of screw 16mm. Maximum insertion of screw 34mm.

Type N - 4 pole - Frame size 2, In = 2000A to 3200A



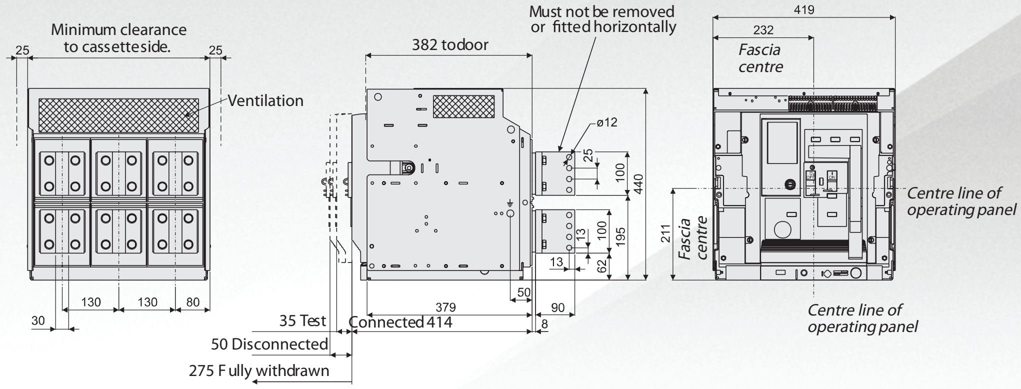


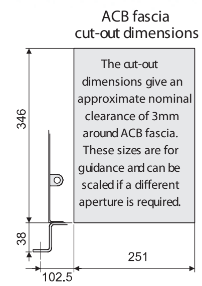
Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.
Captive plate behind copper terminal, tapped M10 x 1.56H.
Minimum insertion of screw 16mm. Maximum insertion of screw 34mm.

Rear Access Connection

Withdrawable pattern

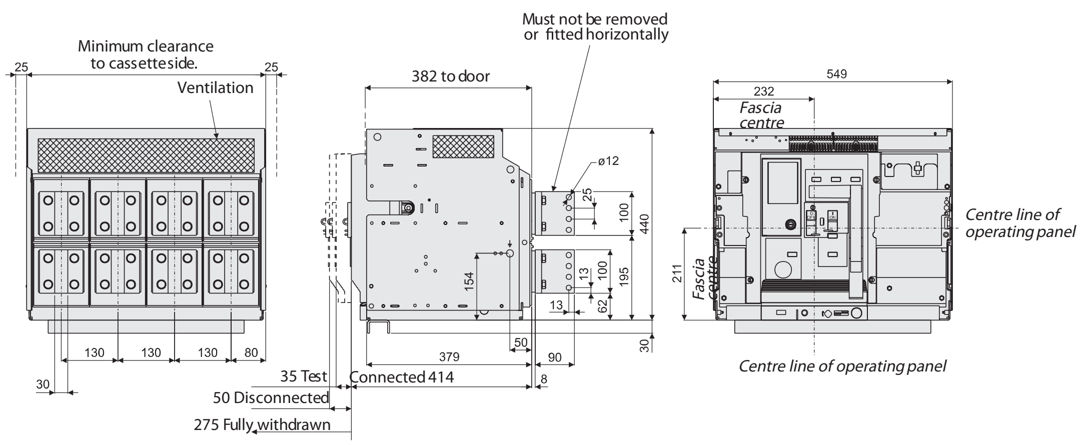
Type N - 3 pole - Frame size 2, In = 4000A

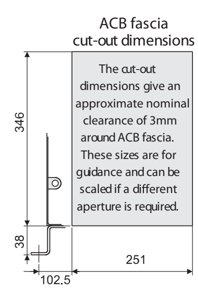




Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Type N - 4 pole - Frame size 2, In = 4000A





Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

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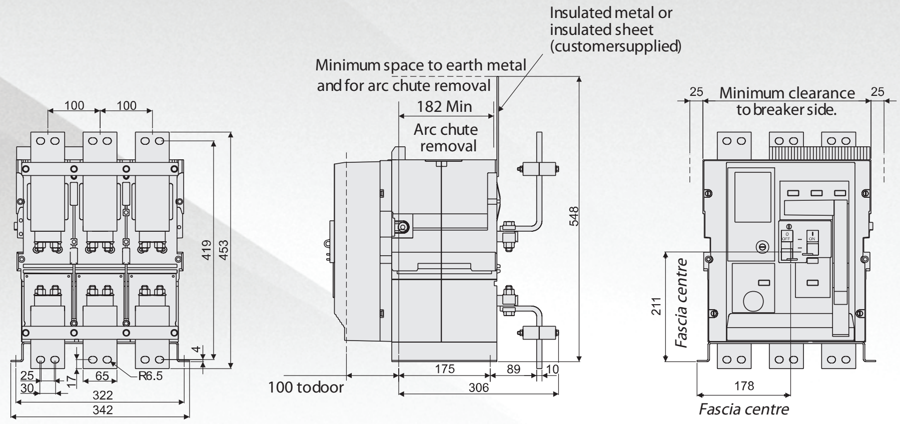
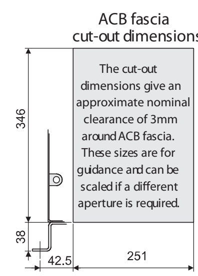
Air Circuit Breakers

Front Access Connection

Fixed pattern

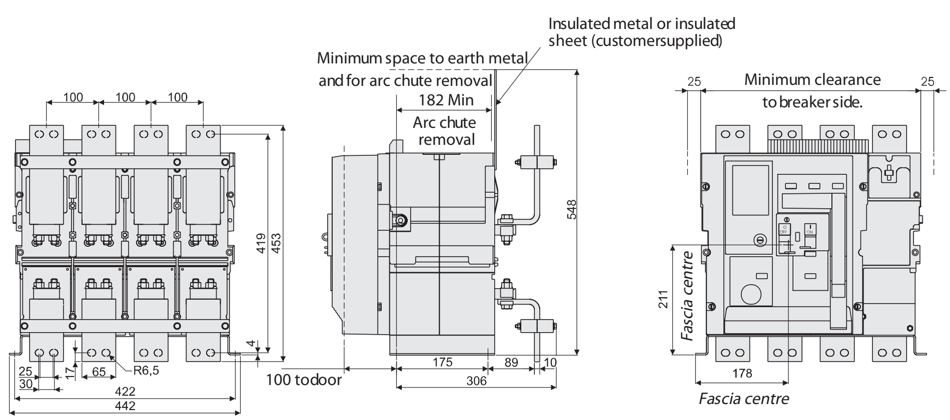
Type N - 3 pole - Frame size 1, In = 400A to 1600A

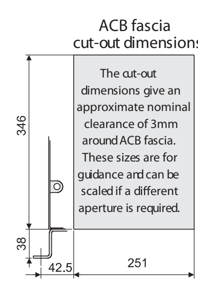




Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Type N - 4 pole - Frame size 1, In = 400A to 1600A



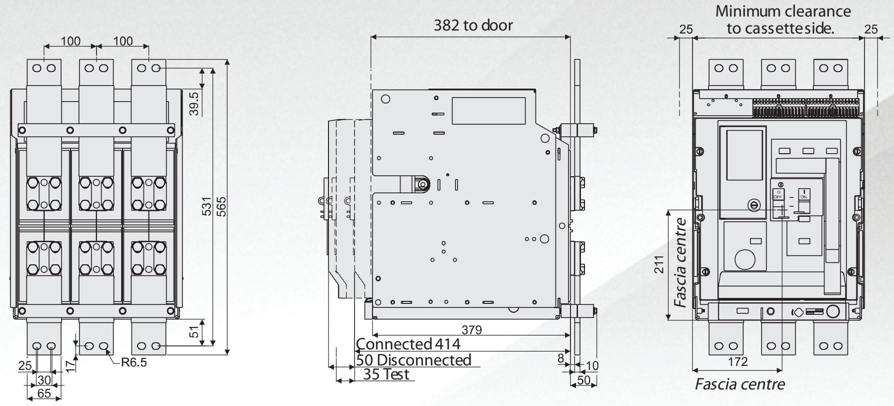


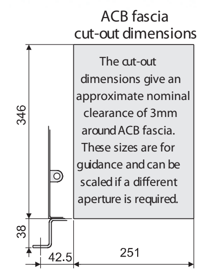
Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Front Access Connection

Withdrawable pattern

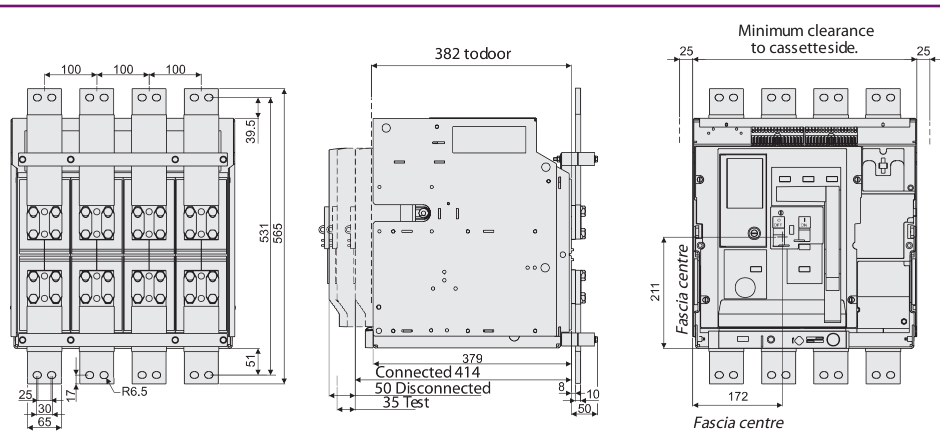
Type N - 3 pole - Frame size 1, In = 400A to 2500A

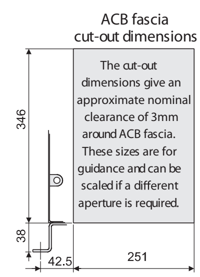




Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Type N - 4 pole - Frame size 1, In = 400A to 2500A



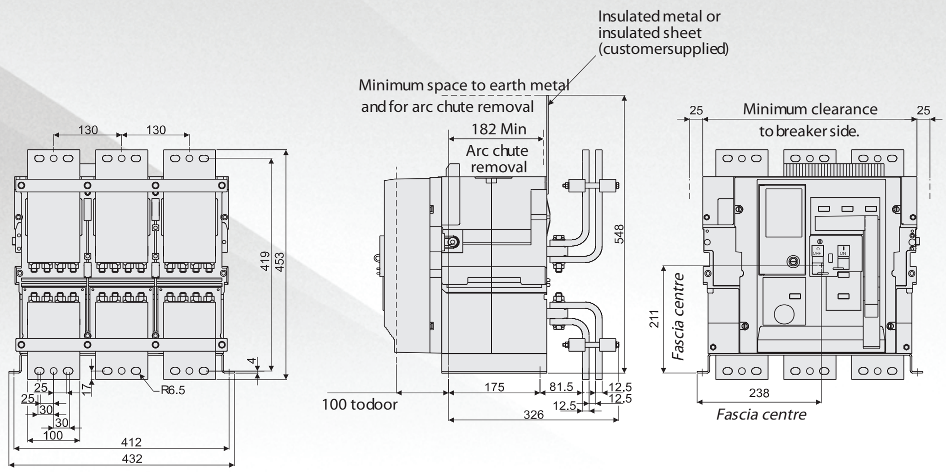


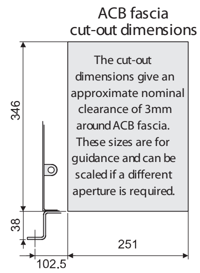
Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Front Access Connection

Fixed pattern

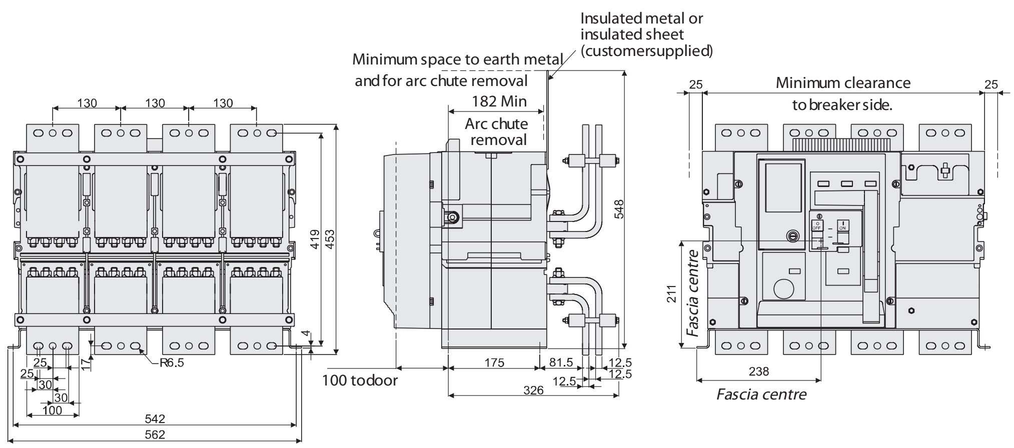
Type N - 3 pole - Frame size 2, In = 2000A to 4000A

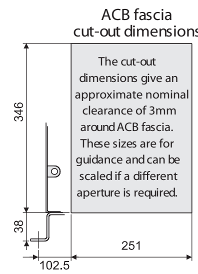




Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Type N - 4 pole - Frame size 2, In = 2000A to 4000A



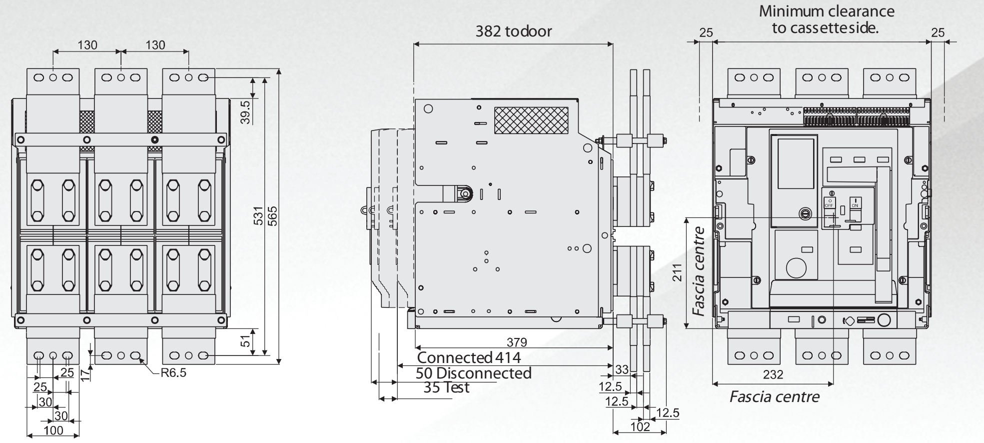


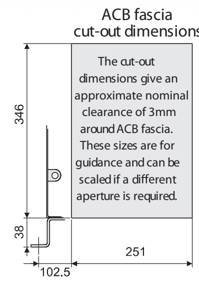
Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Front Access Connection

Withdrawable pattern

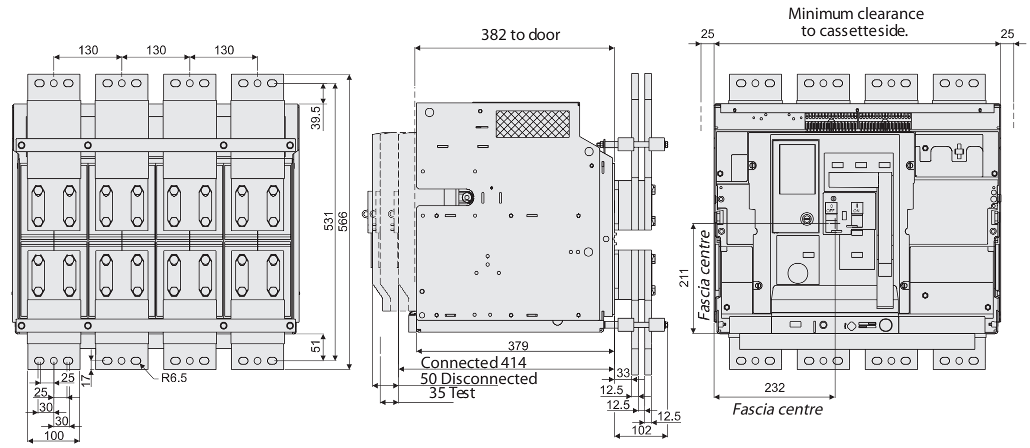
Type N - 3 pole - Frame size 2, In = 2000A to 4000A

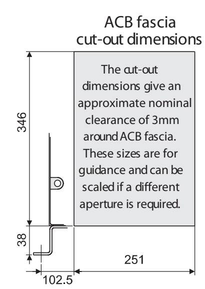




Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Type N - 4 pole - Frame size 2, In = 2000A to 4000A



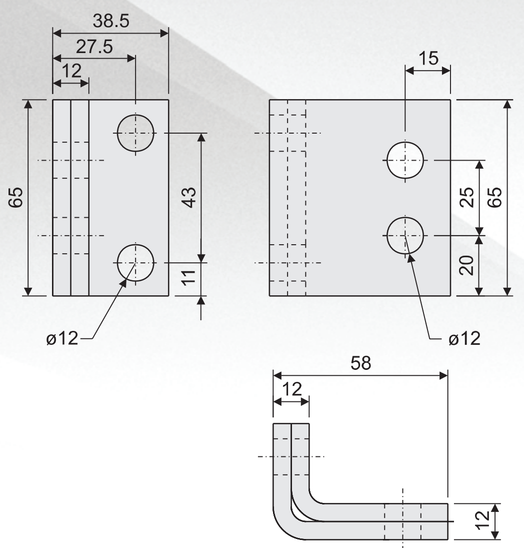


Copperwork must be supported within 200mm of breaker connections – busbars or cables.
All connections to be tightened to 50Nm.

Adaptor Connections (For Cassette Only)

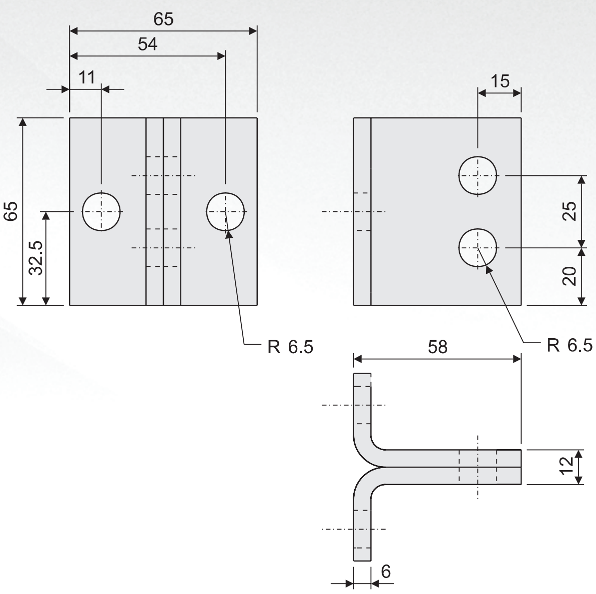
Rear Adapter Vertical Connection

Type S - Frame 1 - In = 400A to 1600A (max)



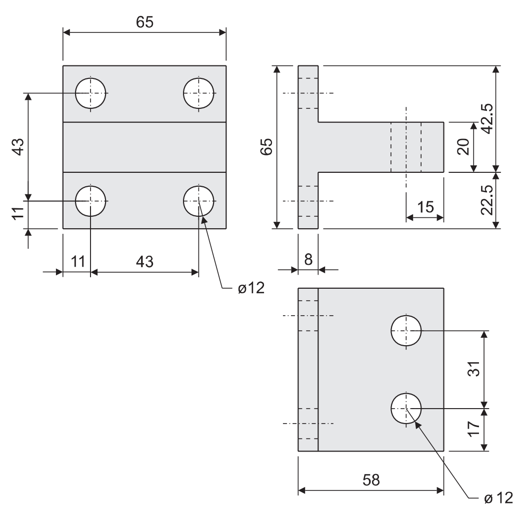
Rear Adapter Horizontal Connection

Type S - Frame 1 - In = 400A to 1600A (max)

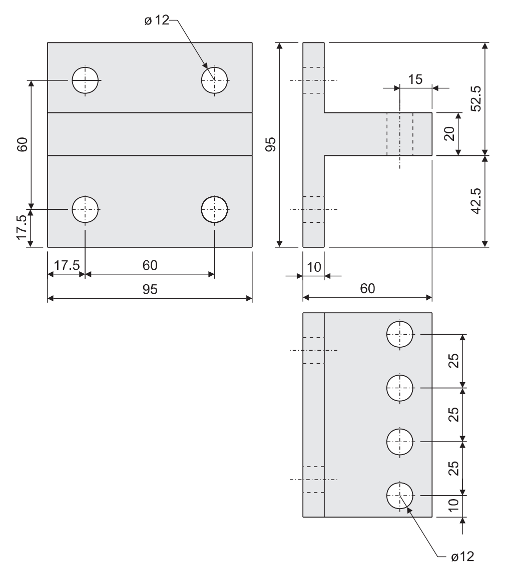


Rear Adapter Vertical / Horizontal Connection

Type S - Frame 1 - In = 2000A & 2500A (max)
Type N - Frame 1 - In = 400A to 2500A (max)



Type S - Frame 2 - In = 2000A to 3200A (max)
Type N - Frame 2 - In = 2000A to 3200A (max)
Type H - Frame 2 - In = 800A to 3200A (max)

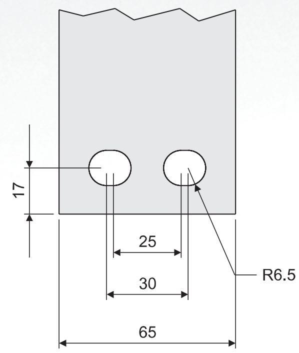


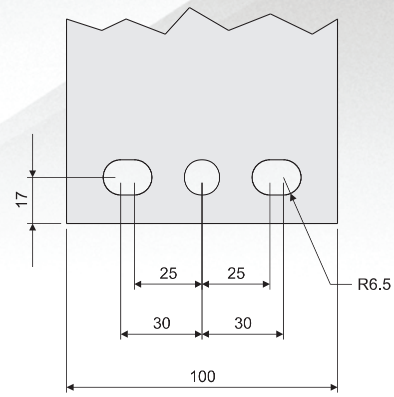
Adaptor Connections (For Cassette Only)

Copper connections - Front access (Fixed and/or withdrawable)

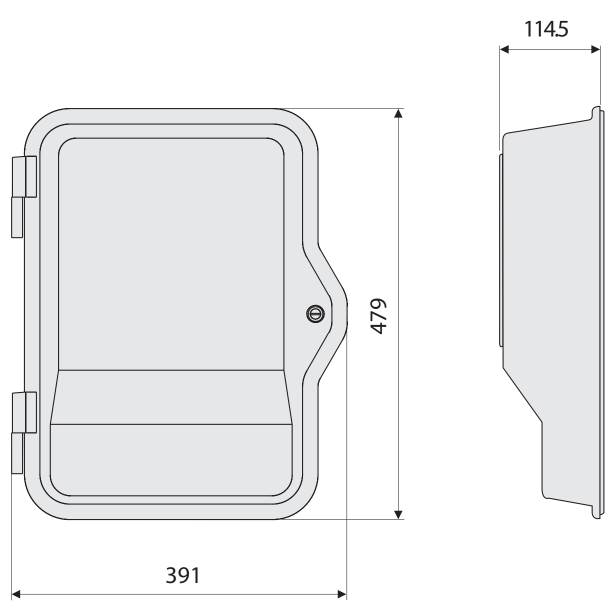
Type S - Frame 1 - In = 400A to 2500A (max)
Type N - Frame 1 - In = 400A to 2500A (max)

Type S - Frame 2 - In = 2000A to 4000A
Type N - Frame 2 - In = 2000A to 4000A
Type H - Frame 2 - In = 800A to 4000A





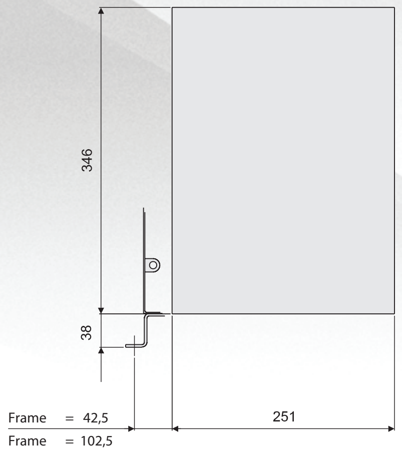
IP54 Door (Withdrawable unit only - Frame 1 & 2 only)



Door Cut-outs

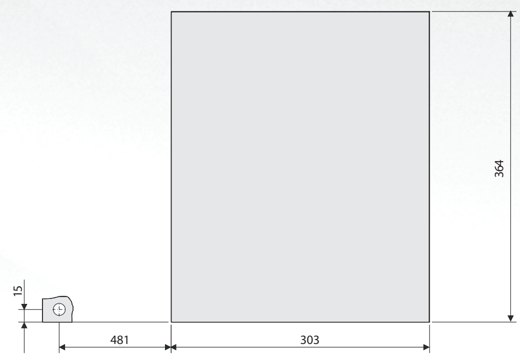
Fixed pattern - Facia cut-out

Frame 1 & 2



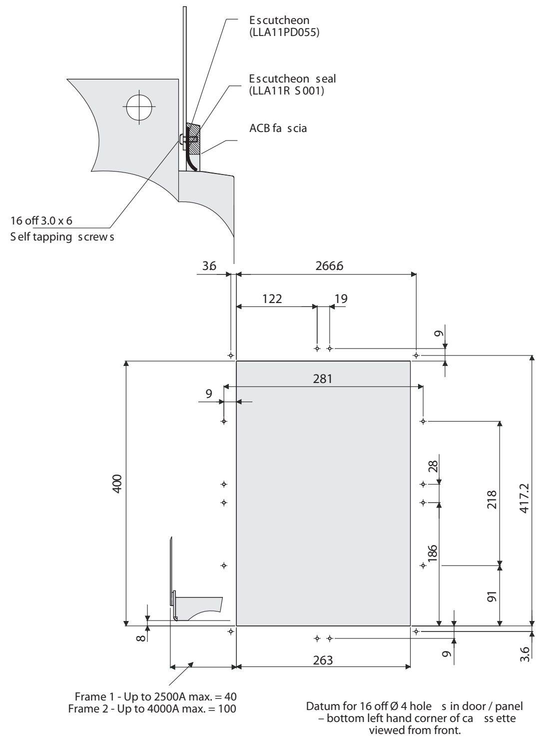
The cut-out dimensions shown above give an approximate nominal clearance of 3mm around ACB fascia. These sizes are for guidance and can be scaled if a different aperture is required.

Frame 3

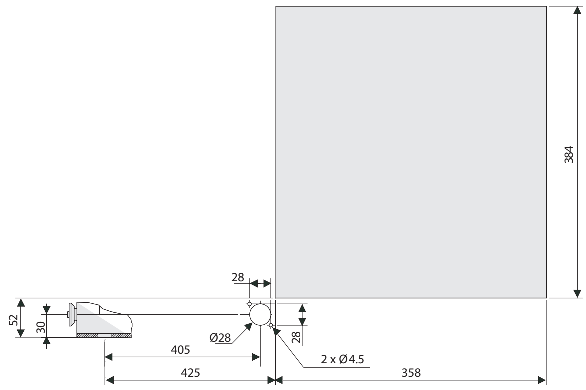


Withdrawable pattern - Cubicle door/panel

Frame 1 & 2



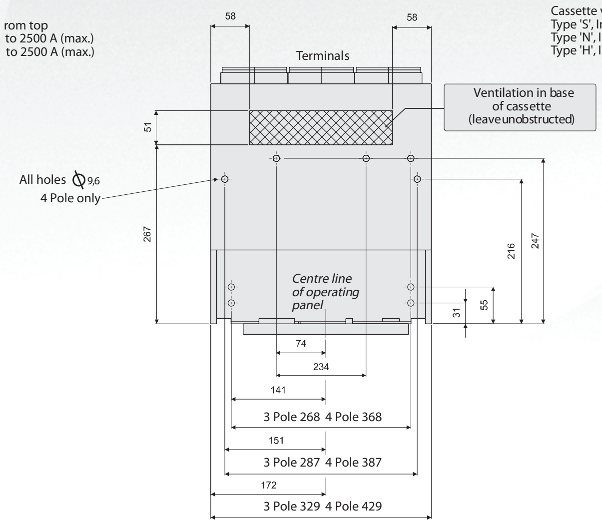
Frame3



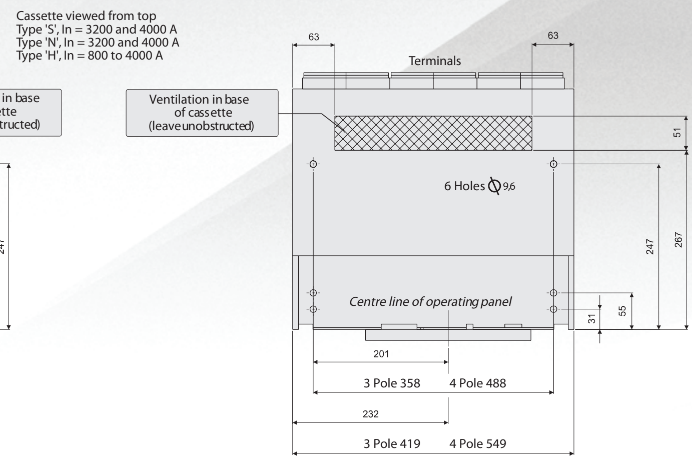
Cassette

Cassette mounting details

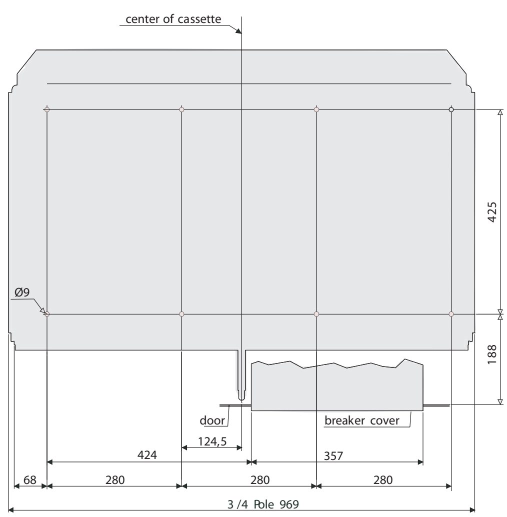
Type S - Frame 1 - In = 400A to 2500A (max)
Type N - Frame 1 - In = 400A to 2500A (max)



Type S - Frame 2 - In = 2000A to 4000A
Type N - Frame 2 - In = 2000A to 4000A
Type H - Frame 2 - In = 800A to 4000A

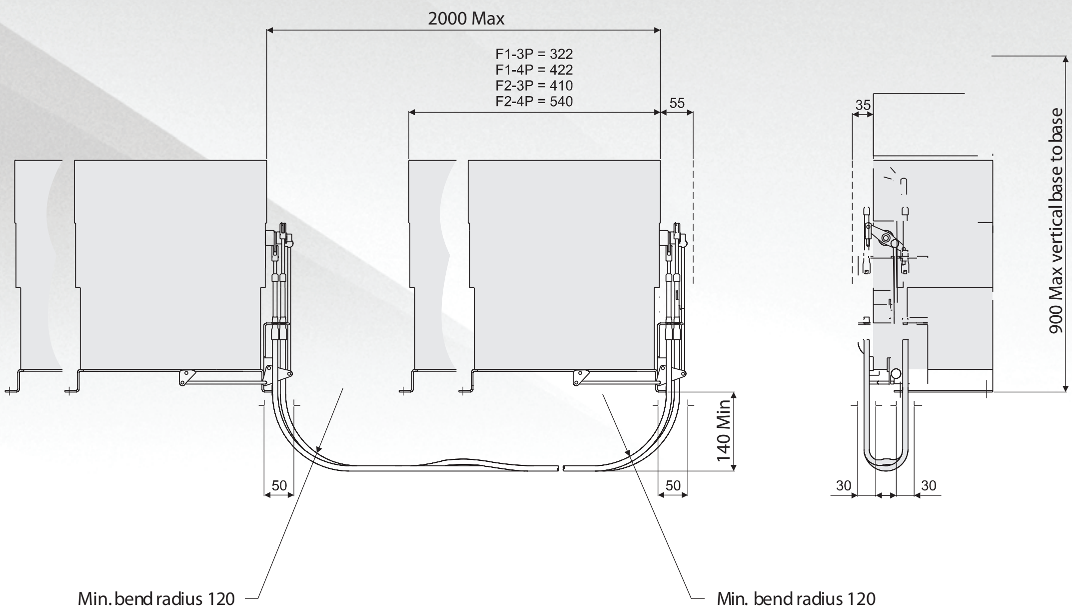


Type C - Frame 3 - In = 5000A to 6300A (max)

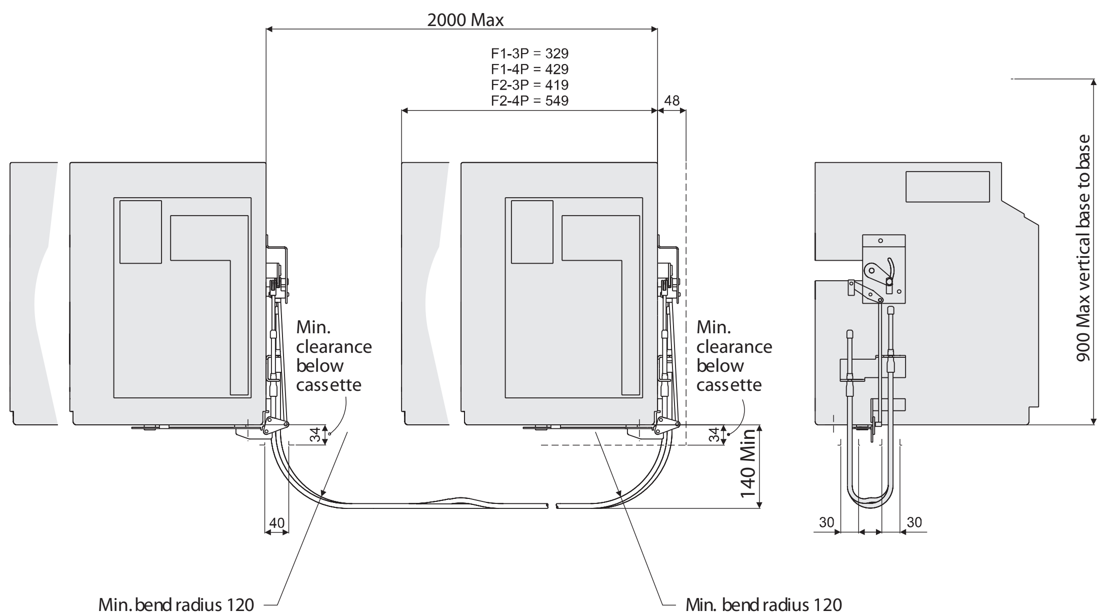


2-way Cable Interlocking

Fixed pattern - Front/rear access

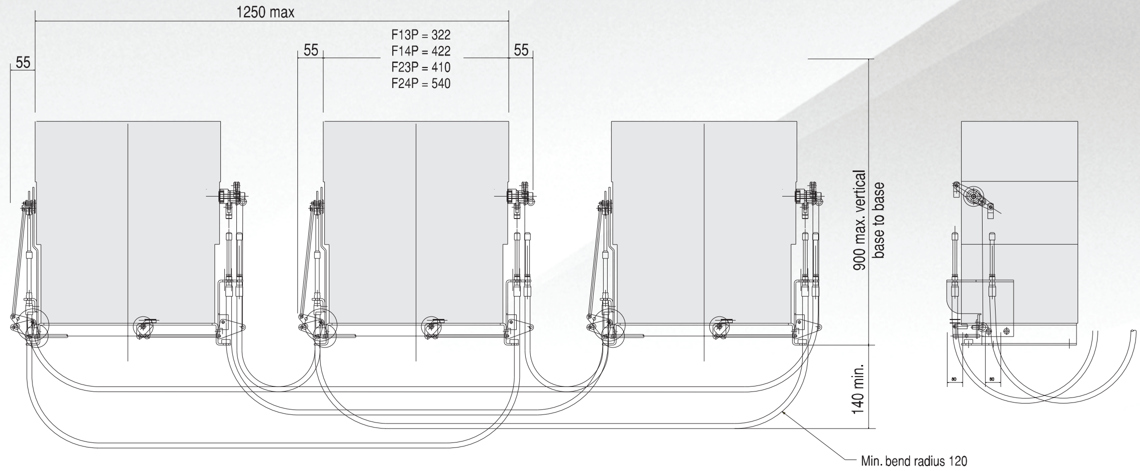


Withdrawable pattern - Front/rear access

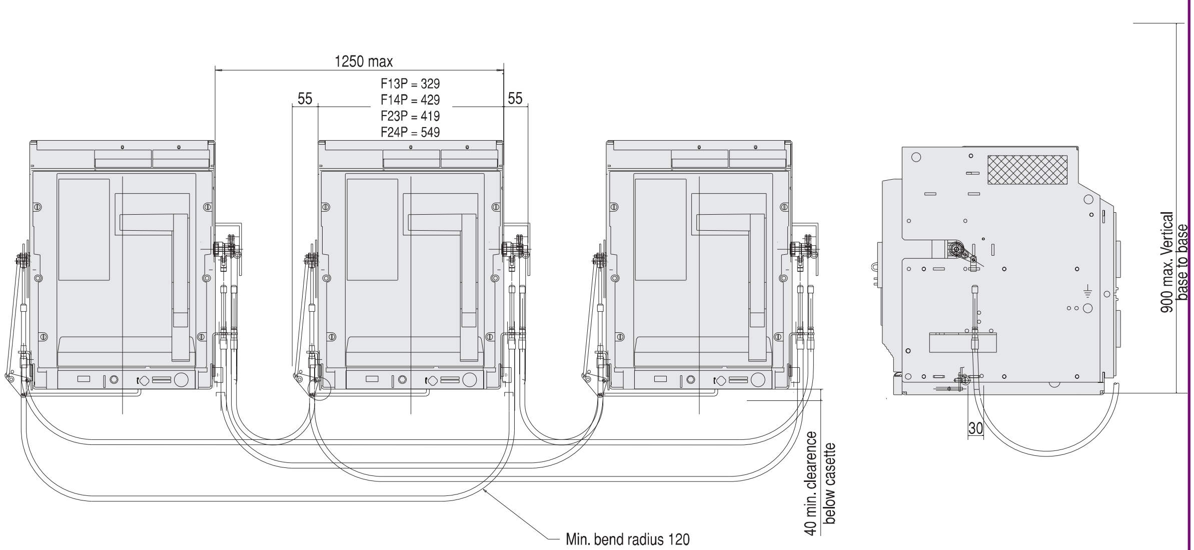


3-way Cable Interlocking

Fixed pattern - Front/rear access



Withdrawable pattern - Front/rear access



Power - Wave (Air Circuit Breaker)

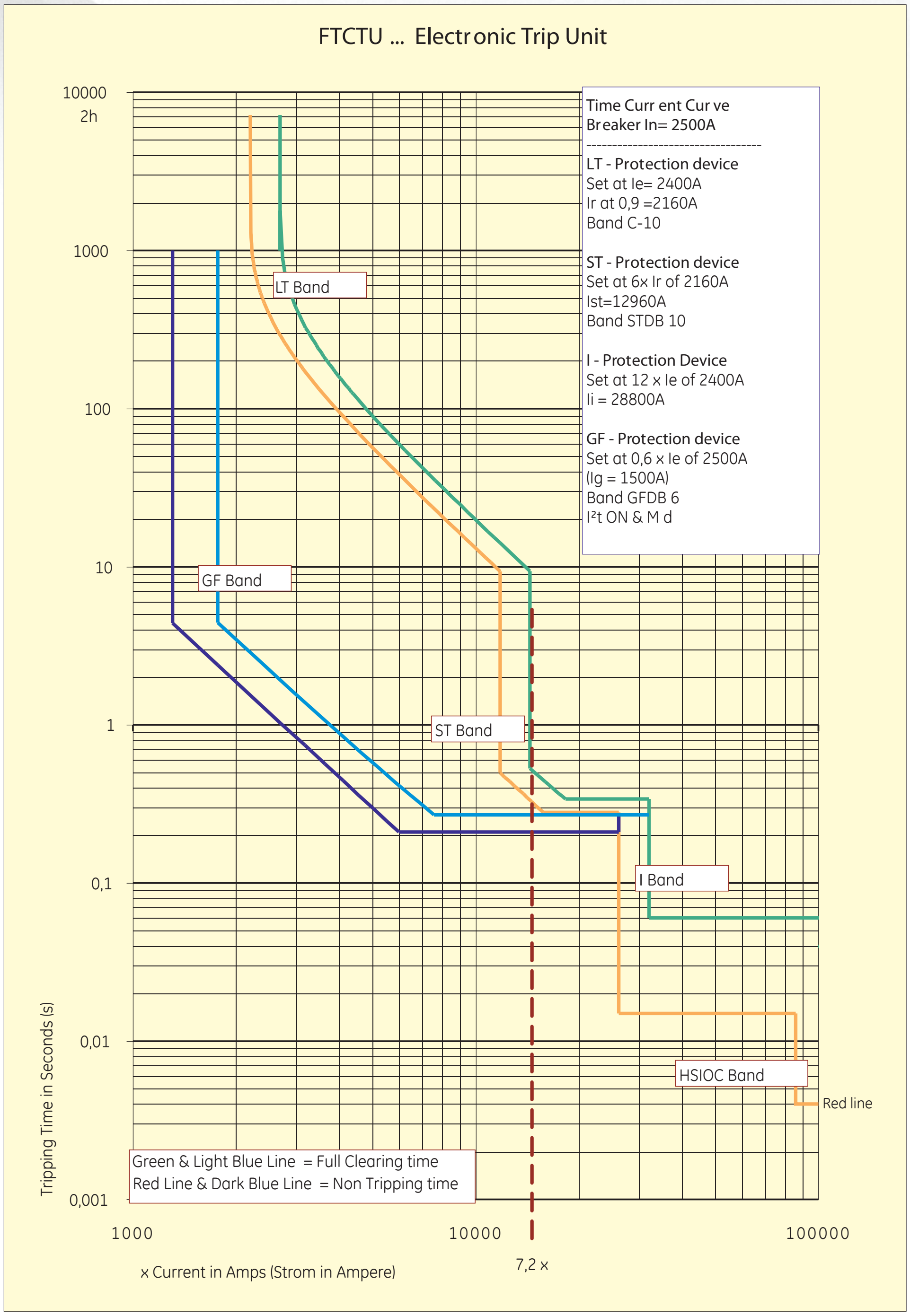
Time Current Curve

Example of Full Time Current Curve
Time Current Curve

The FTCTU Electronic trip unit has many sophisticated setting features and an extremely broad setting range. On request we can provide complete Time Current Curves covering all installed protection devices.

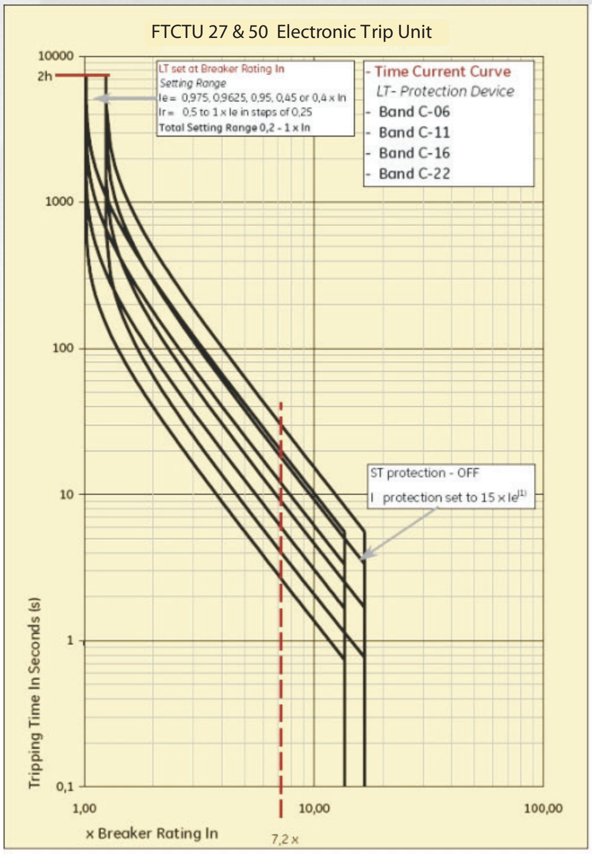
The curves can be produced for any current setting within the range of the installed protection devices, for one or for a combination of two breakers.

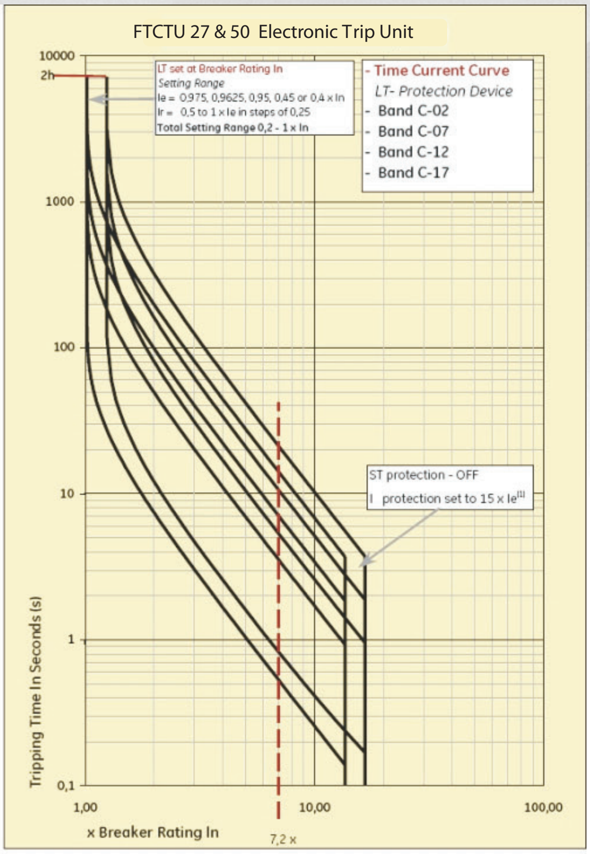
Please contact your local GE Sales Office for more information.

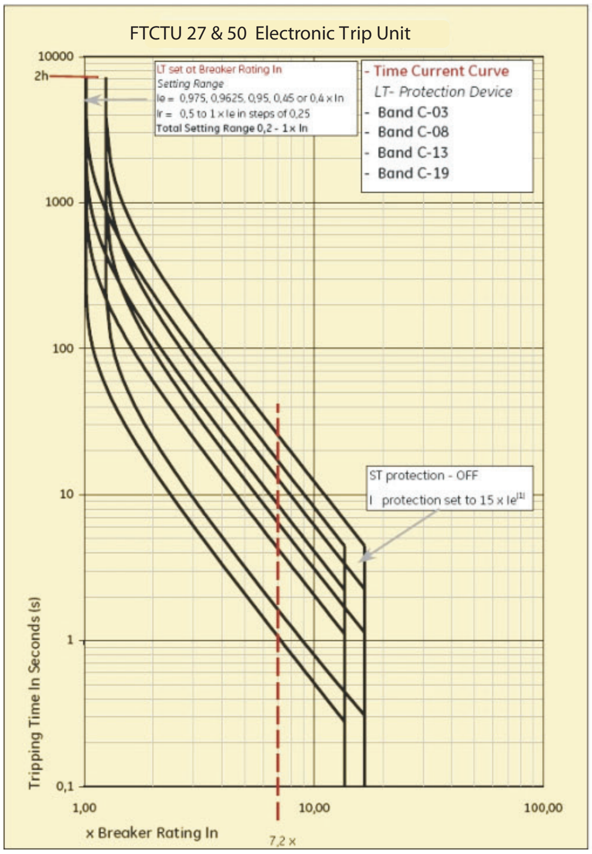


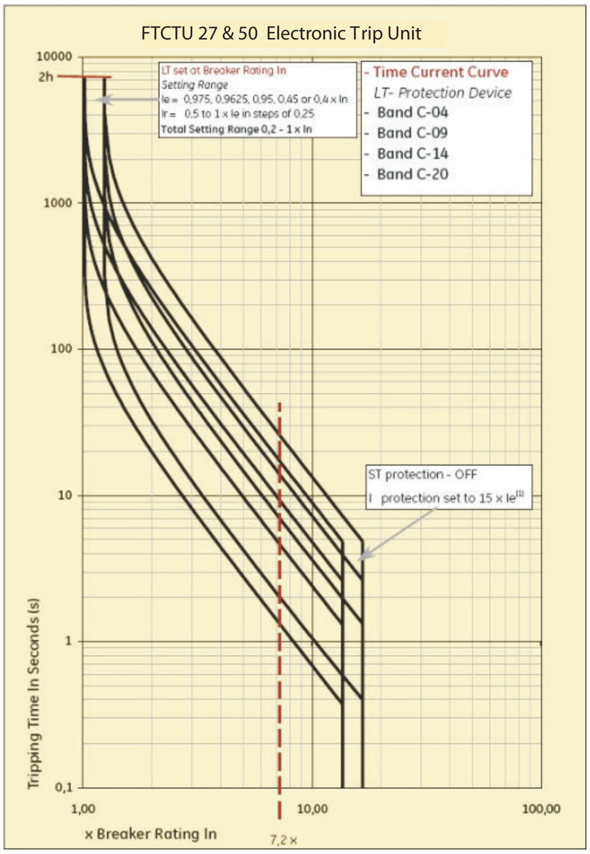
Time Current Curves (cold state)

LT Protection Device



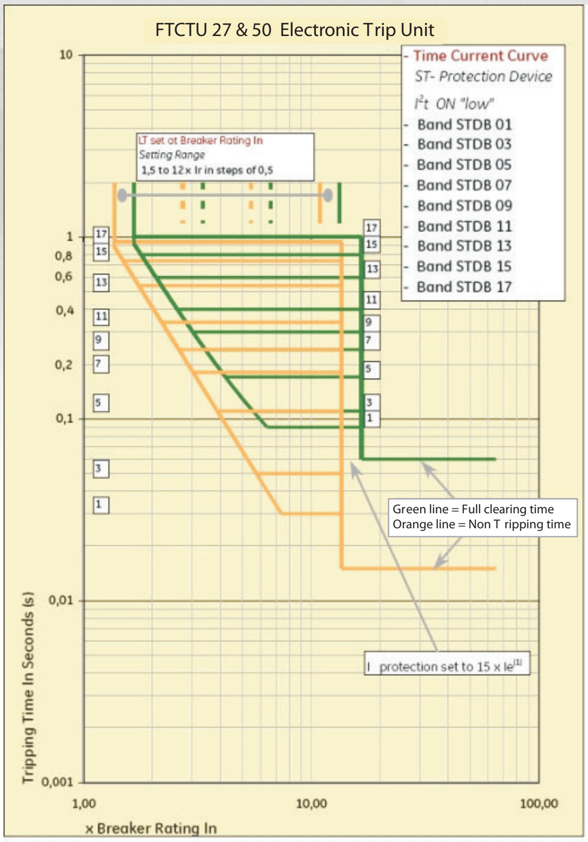


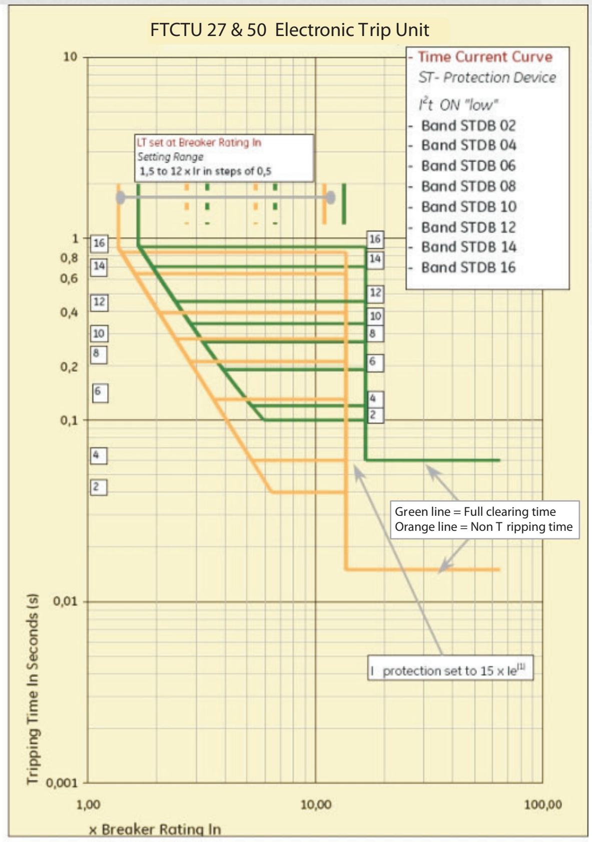


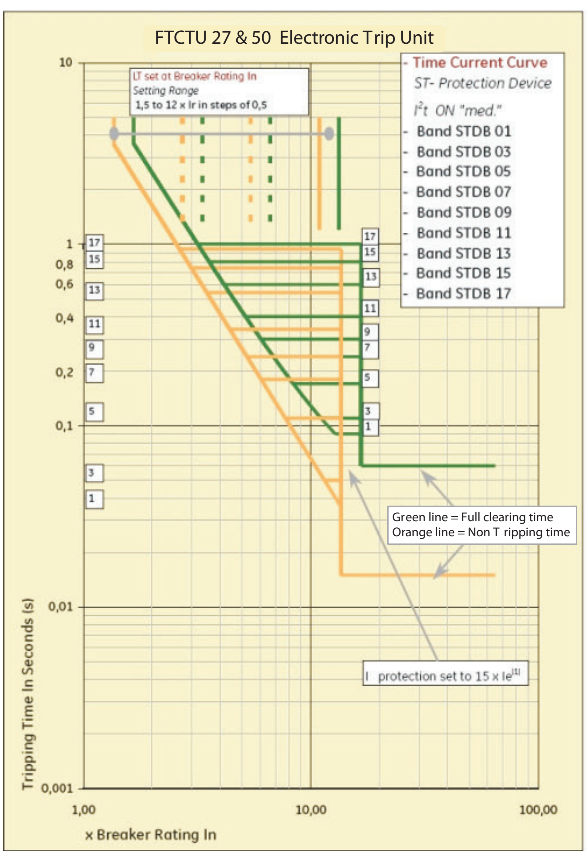


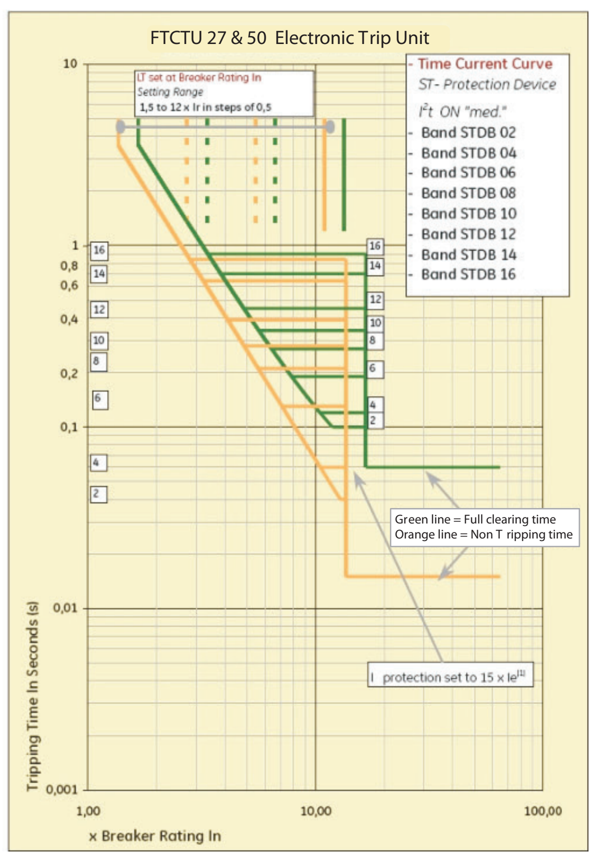
Time Current Curves (cold state)

ST Protection Device



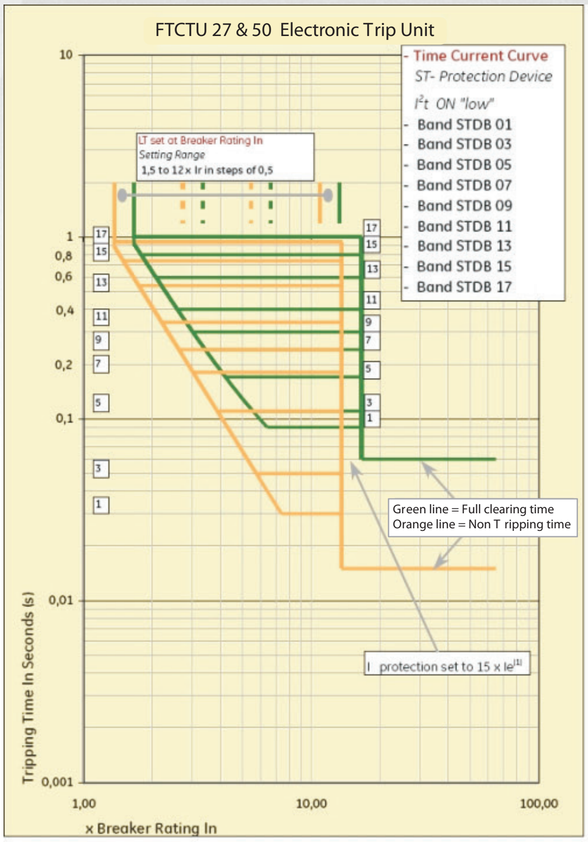


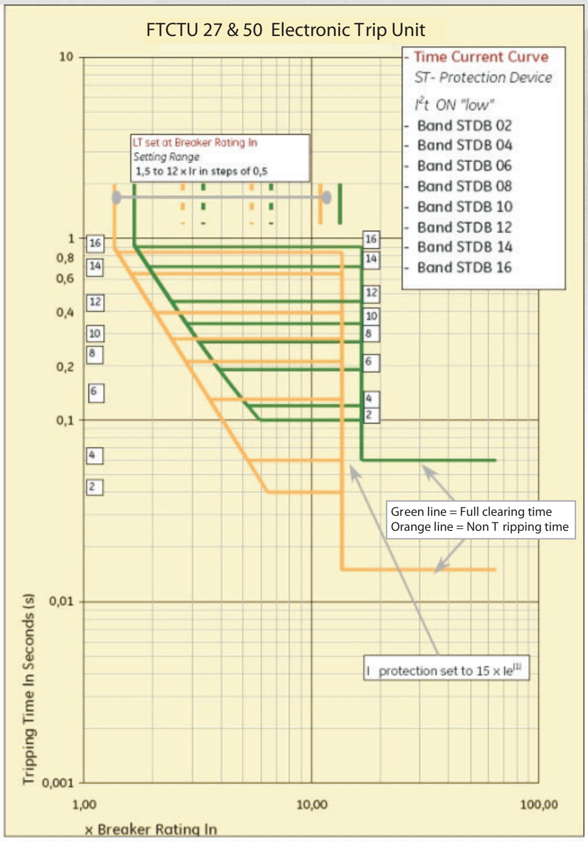


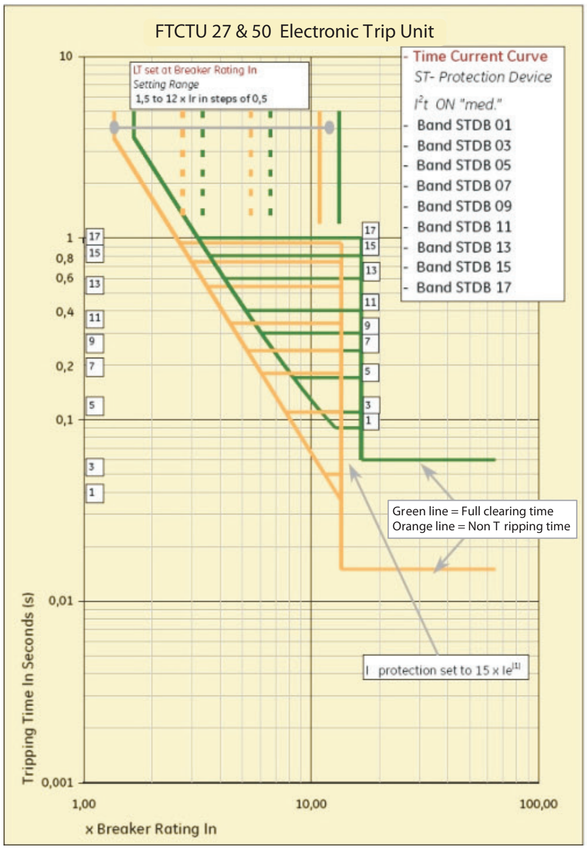


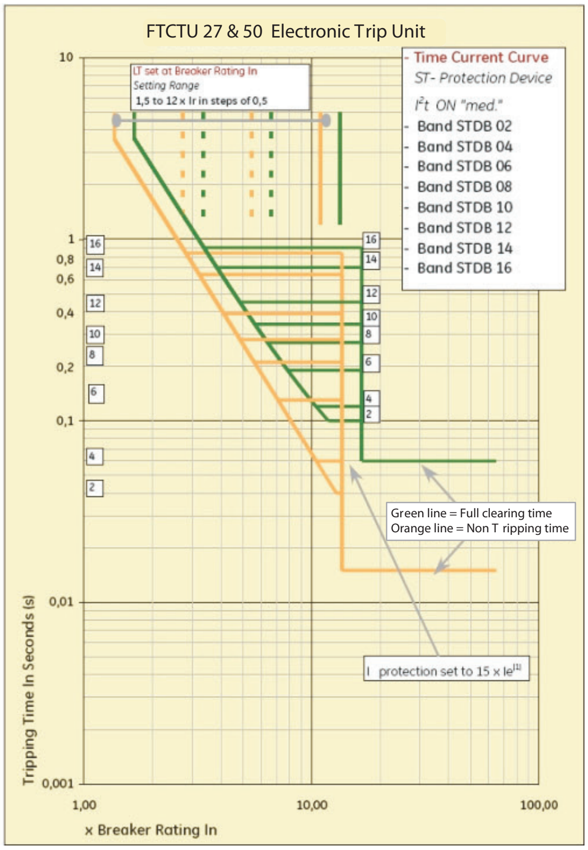
Time Current Curves (cold state)

ST Protection Device



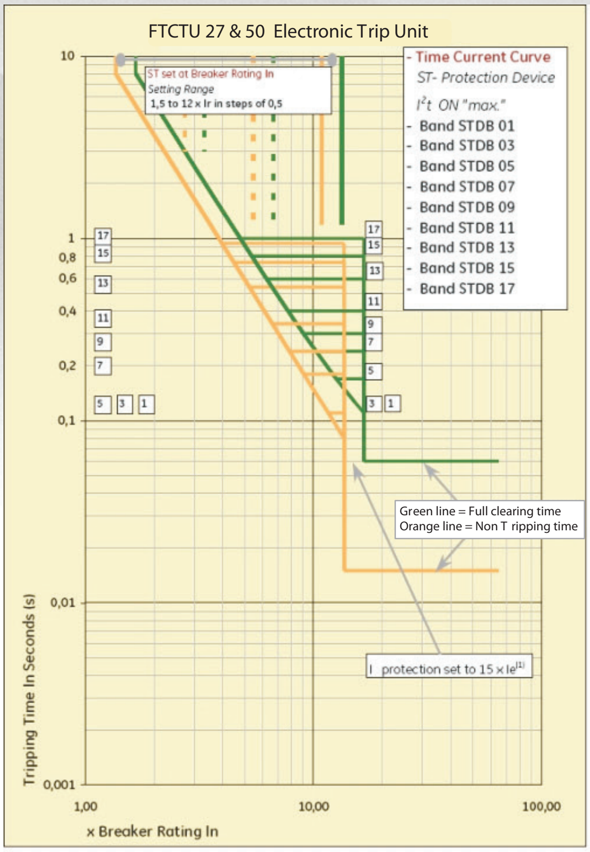


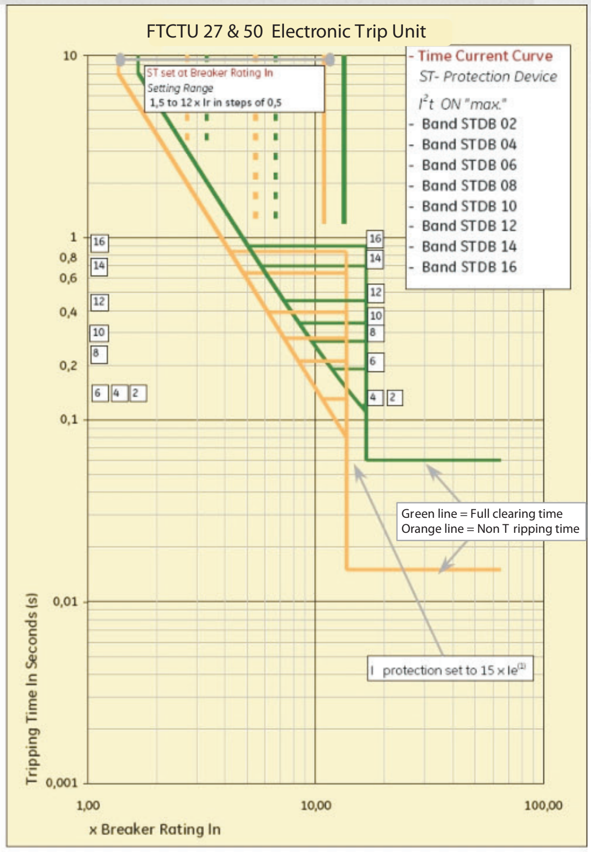


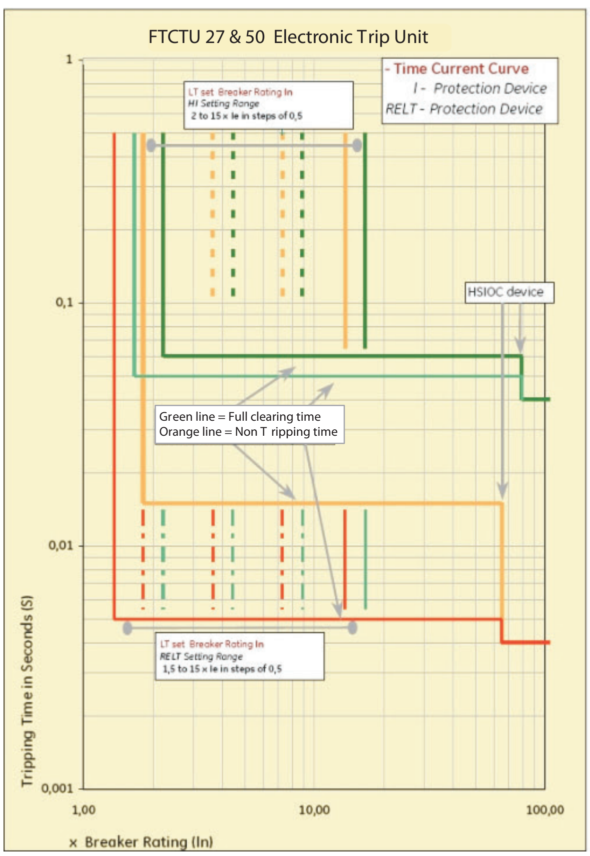


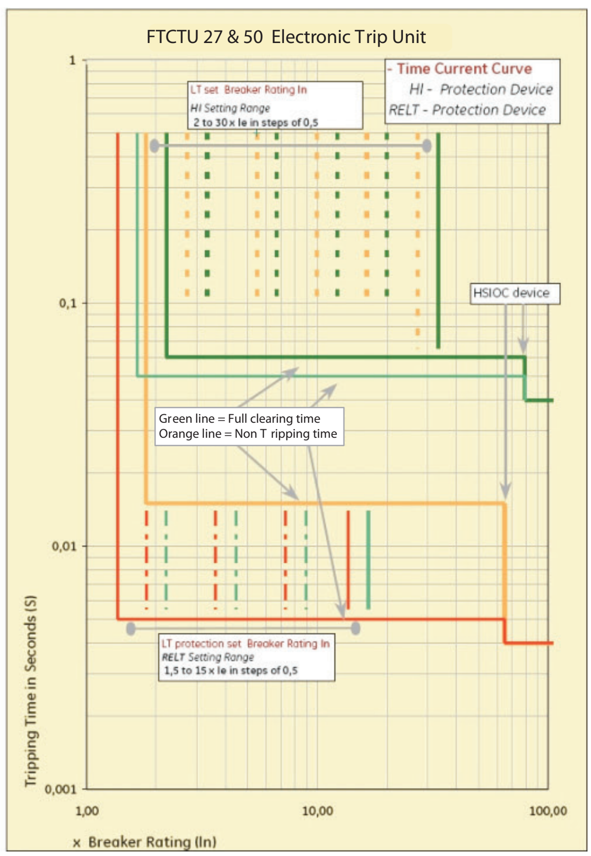
Time Current Curves (cold state)

ST,I and Hi Protection Device



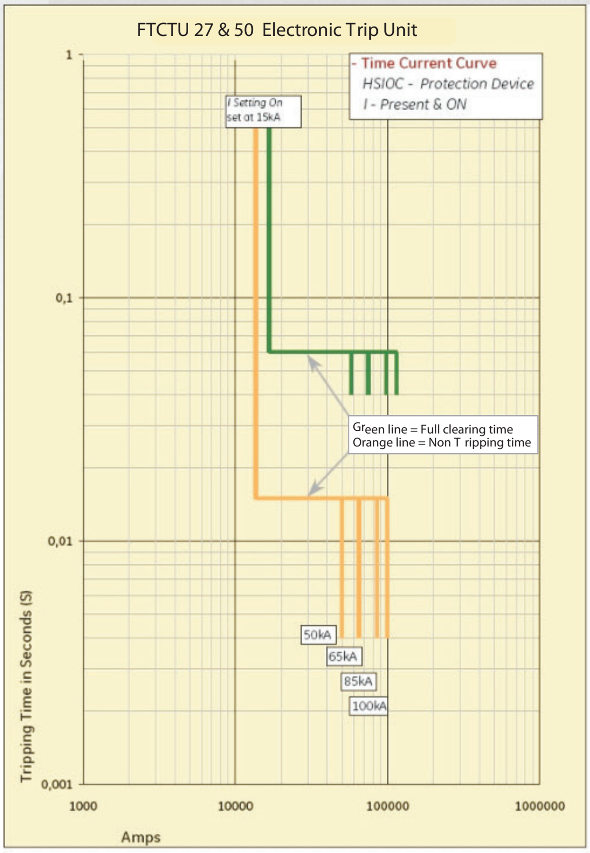


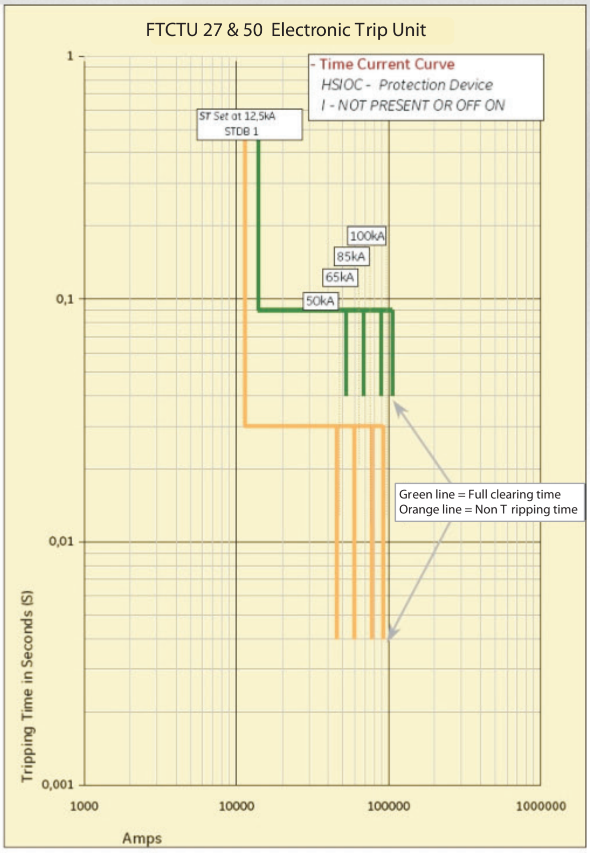


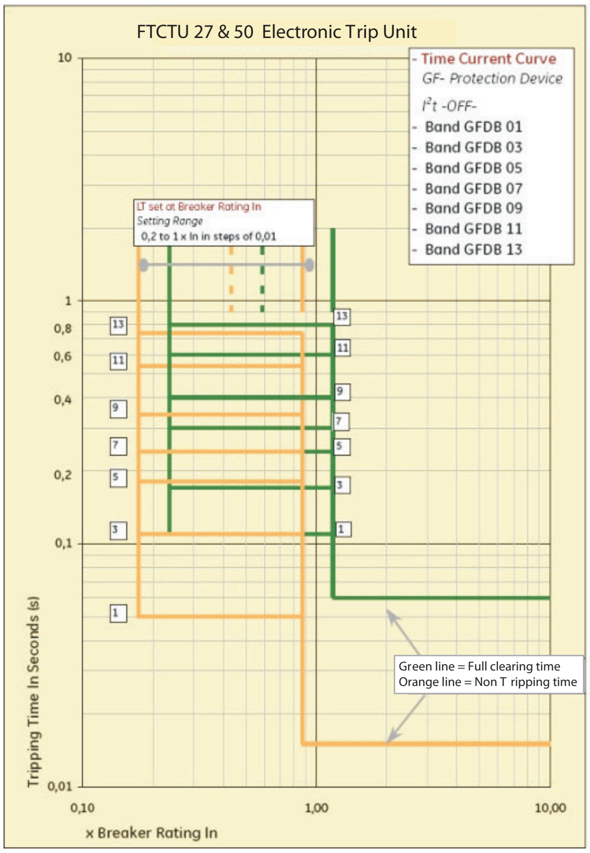


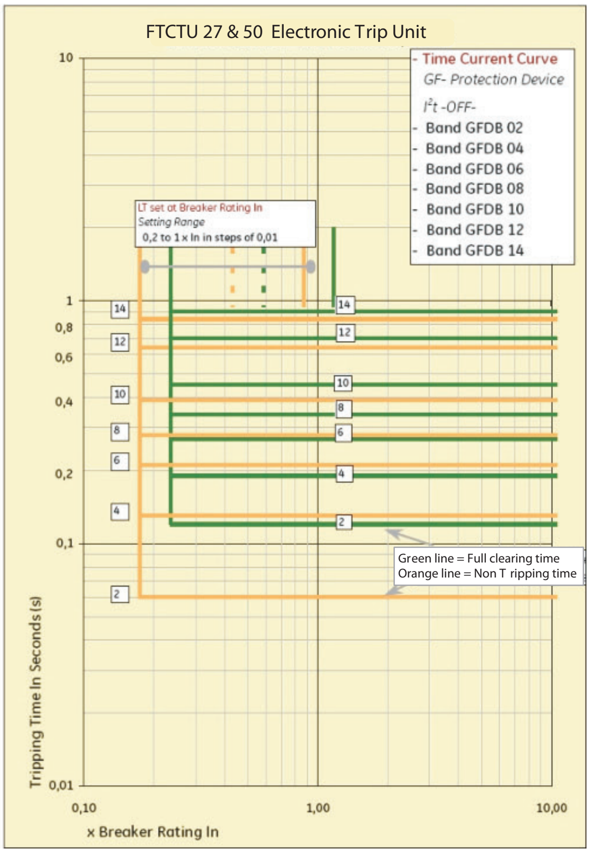
Time Current Curves (cold state)

HSIOC & GF Protection Device



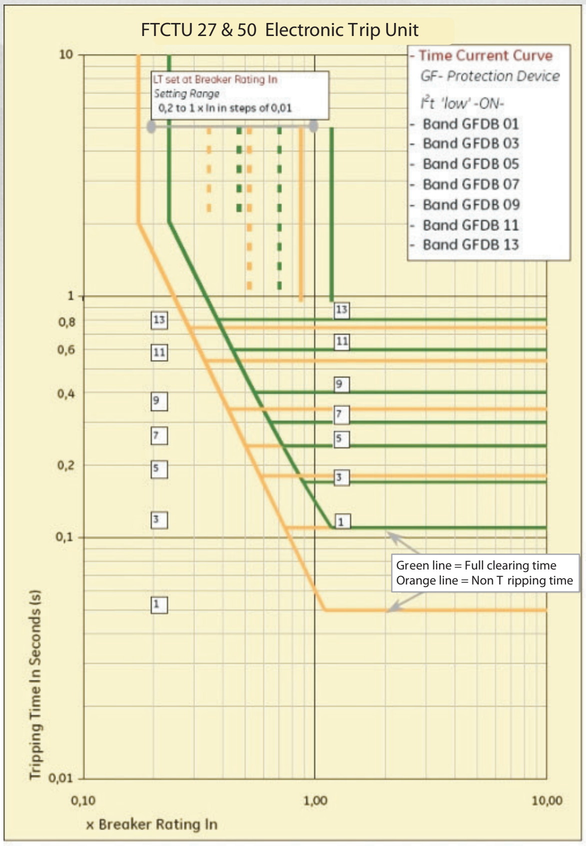


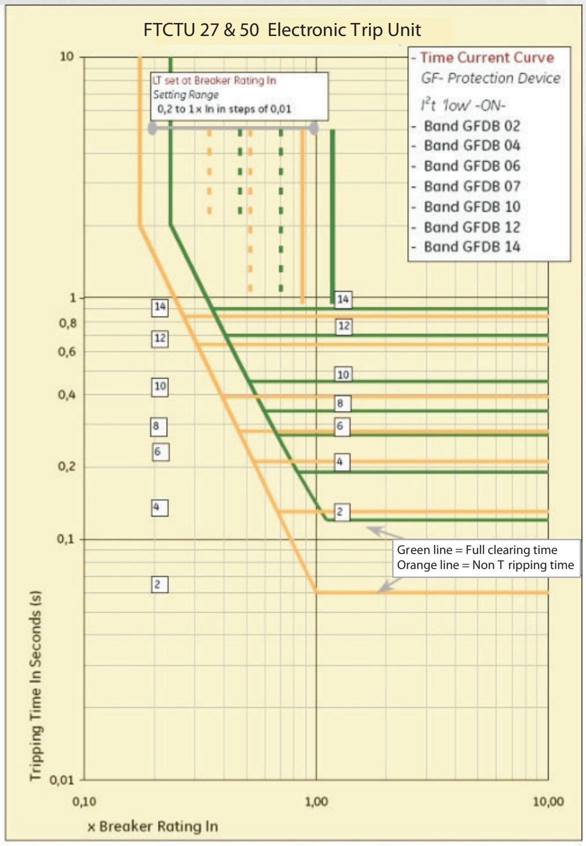


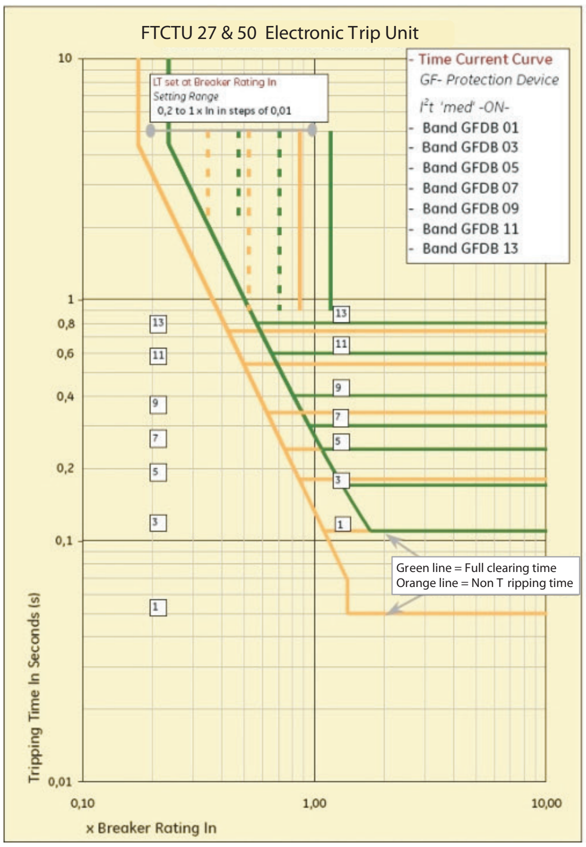


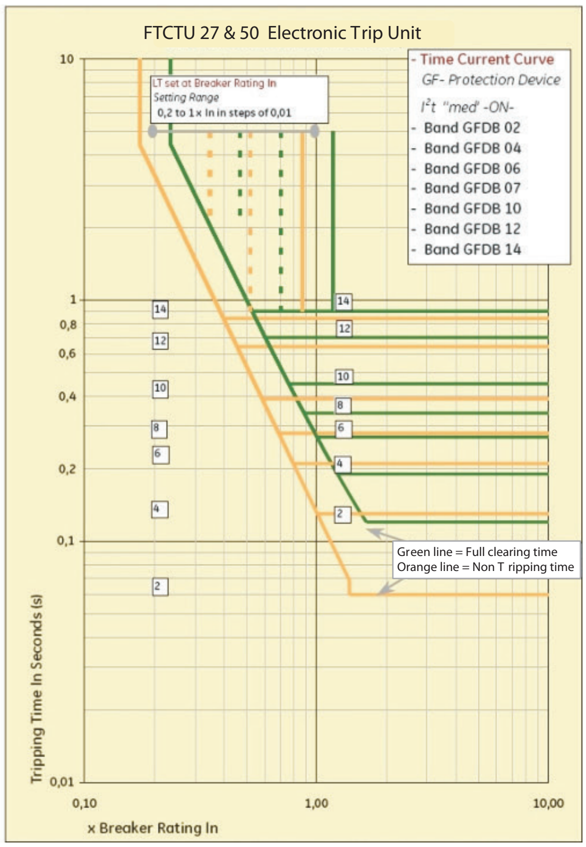
Time Current Curves (cold state)

GF Protection Device



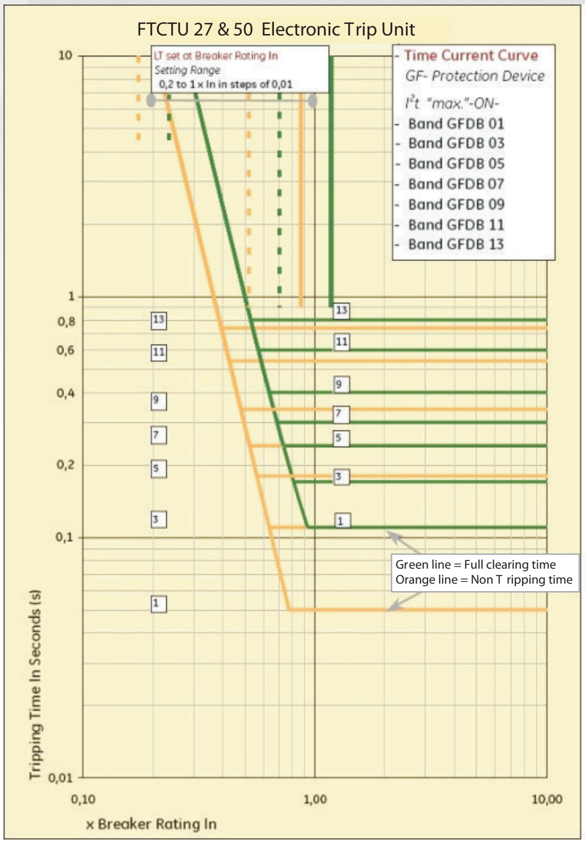


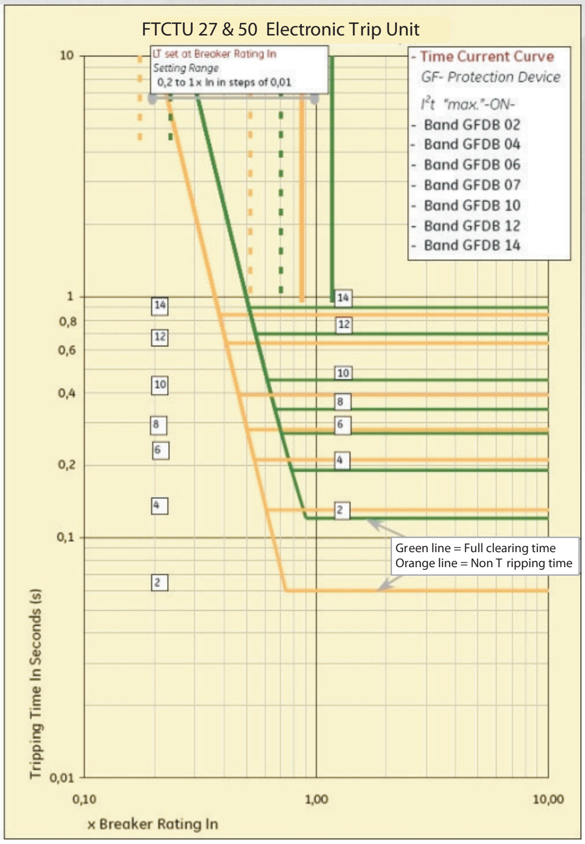




Time Current Curves (cold state)

Protection Device





Contactors

Cat.no	Ref.No	Description	Pack./MOQ
FTC4A310T3	F101524	Contactor 4 kW -400V + Iaux NO Coil 110V 50/60Hz	5
FTC4A310T5	F101525	Contactor 4 kW -400V + Iaux NO Coil 230V 50/60Hz	5
FTC4A310T13	F101526	Contactor 4 kW -400V + Iaux NO Coil 380V 50/60Hz	5
FTC4A301T3	F101527	Contactor 4 kW -400V + Iaux NC Coil 110V 50/60Hz	5
FTC4A301T5	F101528	Contactor 4 kW -400V + Iaux NC Coil 230V 50/60Hz	5
FTC4A301T13	F101529	Contactor 4 kW -400V + Iaux NC Coil 380V 50/60Hz	5
FTC4A310T2	F101530	Contactor 4 kW -400V + Iaux NO Coil 42V 50/60Hz	5
FTC4A301T2	F101531	Contactor 4 kW -400V + Iaux NC Coil 42V 50/60Hz	5
FTC4A310T9	F101532	Contactor 4 kW -400V + Iaux NO Coil 48V 50/60Hz	5
FTCA301T9	F101533	Contactor 4 kW -400V + Iaux NC Coil 48V 50/60Hz	5
FTC4A310T1	F101534	Contactor 4 kW -400V + Iaux NO Coil 24V 50/60Hz	5
FTC4A301T1	F101535	Contactor 4 kW -400V + Iaux NC Coil 24V 50/60Hz	5
FTC5A310T3	F101536	Contactor 5.5 kW -400V + Iaux NO Coil1 10V 50/60Hz	5
FTC5A310T5	F101537	Contactor 5.5 kW -400V + Iaux NO Coil 230V 50/60Hz	5
FTC5A310T13	F101538	Contactor 5.5 kW -400V + Iaux NO Coil 380V 50/60Hz	5
FTC5A301T3	F101539	Contactor 5.5 kW -400V + Iaux NC Coil 110V 50/60Hz	5
FTC5A301T5	F101540	Contactor 5.5 kW -400V + Iaux NC Coil 230V 50/60Hz	5
FTC5A301T13	F101541	Contactor 5.5 kW -400V + Iaux NC Coil 380V 50/60Hz	5
FTC5A310T2	F101542	Contactor 5.5 kW -400V + Iaux NO Coil 42V 50/60Hz	5
FTC5A301T2	F101543	Contactor 5.5 kW -400V + Iaux NC Coil 42V 50/60Hz	5
FTC5A310T9	F101544	Contactor 5.5 kW -400V + Iaux NO Coil 48V 50/60Hz	5
FTC5A301T9	F101545	Contactor 5.5 kW -400V + Iaux NC Coil 48V 50/60Hz	5
FTC5A310T1	F101546	Contactor 5.5 kW -400V + Iaux NO Coil 24V 50/60Hz	5
FTC5A301T1	F101547	Contactor 5.5 kW -400V + Iaux NC Coil 24V 50/60Hz	5
FTC7A310T3	F101548	Contactor 7.5 kW -400V + Iaux NO Coil 110V 50/60Hz	5
FTC7A310T5	F101549	Contactor 7.5 kW -400V + Iaux NO Coil 230V 50/60Hz	5
FTC7A310T13	F101550	Contactor 7.5 kW -400V + Iaux NO Coil 380V 50/60Hz	5
FTC7A301T3	F101551	Contactor 7.5 kW -400V + Iaux NC Coil 110V 50/60Hz	5
FTC7A301T5	F101552	Contactor 7.5 kW -400V + Iaux NC Coil 230V 50/60Hz	5
FTC7A301T13	F101553	Contactor 7.5 kW -400V + Iaux NC Coil 380V 50/60Hz	5
FTC7A310T2	F101554	Contactor 7.5 kW -400V + Iaux NO Coil 42V 50/60Hz	5
FTC7A301T2	F101555	Contactor 7.5 kW -400V + Iaux NC Coil 42V 50/60Hz	5
FTC7A310T9	F101556	Contactor 7.5 kW -400V + Iaux NO Coil 48V 50/60Hz	5
FTC7A301T9	F101557	Contactor 7.5 kW -400V + Iaux NC Coil 42V 50/60Hz	5
FTC7A310T1	F101558	Contactor 7.5 kW -400V + Iaux NO Coil 48V 50/60Hz	5
FTC7A301T1	F101559	Contactor 7.5 kW -400V + Iaux NC Coil 48V 50/60Hz	5
FTC11A310T3	F101560	Contactor 11 kW -400V + Iaux NO Coil 110V 50/60Hz	5
FTC11A301T3	F101561	Contactor 11 kW -400V + Iaux NC Coil 110V 50/60Hz	5
FTC11A310T5	F101562	Contactor 11 kW -400V + Iaux NO Coil 230V 50/60Hz	5
FTC11A301T5	F101563	Contactor 11 kW -400V + Iaux NC Coil 230V 50/60Hz	5
FTC11A310T13	F101564	Contactor 11 kW -400V + Iaux NO Coil 380V 50/60Hz	5
FTC11A301T13	F101565	Contactor 11 kW -400V + Iaux NC Coil 380V 50/60Hz	5

Contactors

Cat.no	Ref.No	Description	Pack./MOQ
FTC11A310T2	F101566	Contactor 11 kW -400V + Iaux NO Coil 42V 50/60Hz	5
FTC11A301T2	F101567	Contactor 11 kW -400V + Iaux NC Coil 42V 50/60Hz	5
FTC11A310T9	F101568	Contactor 11 kW -400V + Iaux NO Coil 48V 50/60Hz	5
FTC11A301T9	F101569	Contactor 11 kW -400V + Iaux NC Coil 48V 50/60Hz	5
FTC11A310T1	F101570	Contactor 11 kW -400V + Iaux NO Coil 24V 50/60Hz	5
FTC11A301T1	F101571	Contactor 11 kW -400V + Iaux NC Coil 24V 50/60Hz	5
FTC15A310T3	F101572	Contactor 15 kW -400V + Iaux NO Coil 110V 50/60Hz	5
FTC15A301T3	F101573	Contactor 15 kW -400V + Iaux NC Coil 110V 50/60Hz	5
FTC15A310T5	F101574	Contactor 15 kW -400V + Iaux NO Coil 230V 50/60Hz	5
FTC15A301T5	F101575	Contactor 15 kW -400V + Iaux NC Coil 230V 50/60Hz	5
FTC15A310T13	F101576	Contactor 15 kW -400V + Iaux NO Coil 380V 50/60Hz	5
FTC15A301T13	F101577	Contactor 15 kW -400V + Iaux NC Coil 380V 50/60Hz	5
FTC15A310T2	F101578	Contactor 15 kW -400V + Iaux NO Coil 42V 50/60Hz	5
FTC15A301T2	F101579	Contactor 15 kW -400V + Iaux NC Coil 42V 50/60Hz	5
FTC15A310T9	F101580	Contactor 15 kW -400V + Iaux NO Coil 48V 50/60Hz	5
FTC15A301T9	F101581	Contactor 15 kW -400V + Iaux NC Coil 48V 50/60Hz	5
FTC15A310T1	F101582	Contactor 15 kW -400V + Iaux NO Coil 24V 50/60Hz	5
FTC15A301T1	F101583	Contactor 15 kW -400V + Iaux NC Coil 24V 50/60Hz	5
FTC18A310T3	F101584	Contactor 18.5 kW -400V + Iaux NO Coil 110V 50/60Hz	5
FTC18A301T3	F101585	Contactor 18.5 kW -400V + Iaux NC Coil 110V 50/60Hz	5
FTC18A310T5	F101586	Contactor 18.5 kW -400V + Iaux NO Coil 230V 50/60Hz	5
FTC18A301T5	F101587	Contactor 18.5 kW -400V + Iaux NC Coil 230V 50/60Hz	5
FTC18A310T13	F101588	Contactor 18.5 kW -400V + Iaux NO Coil 380V 50/60Hz	5
FTC18A301T13	F101589	Contactor 18.5 kW -400V + Iaux NC Coil 380V 50/60Hz	5
FTC18A310T2	F101590	Contactor 18.5 kW -400V + Iaux NO Coil 42V 50/60Hz	5
FTC18A301T2	F101591	Contactor 18.5 kW -400V + Iaux NC Coil 42V 50/60Hz	5
FTC18A310T9	F101592	Contactor 18.5 kW -400V + Iaux NO Coil 48V 50/60Hz	5
FTC18A301T9	F101593	Contactor 18.5 kW -400V + Iaux NC Coil 48V 50/60Hz	5
FTC18A310T1	F101594	Contactor 18.5 kW -400V + Iaux NO Coil 24V 50/60Hz	5
FTC18A301T1	F101595	Contactor 18.5 kW -400V + Iaux NC Coil 24V 50/60Hz	5
FTC22A311M3	F101596	Contactor 22 kW -400V + Iaux NO Coil 110V 50/60Hz	1
FTC22A311M5	F101597	Contactor 22 kW -400V + Iaux NO Coil 230V 50/60Hz	1
FTC22A311M13	F101598	Contactor 22 kW -400V + Iaux NO Coil 380V 50/60Hz	1
FTC22A311M2	F101599	Contactor 22 kW -400V + Iaux NO Coil 42V 50/60Hz	1
FTC22A311M9	F101600	Contactor 22 kW -400V + Iaux NO Coil 48V 50/60Hz	1
FTC22A311M1	F101601	Contactor 22 kW -400V + Iaux NO Coil 24V 50/60Hz	5
FTC30A311M3	F101602	Contactor 30 kW -400V + Iaux NO Coil 110V 50/60Hz	5
FTC30A311M5	F101603	Contactor 30 kW -400V + Iaux NO Coil 230V 50/60Hz	5
FTC30A311M13	F101604	Contactor 30 kW -400V + Iaux NO Coil 380V 50/60Hz	5

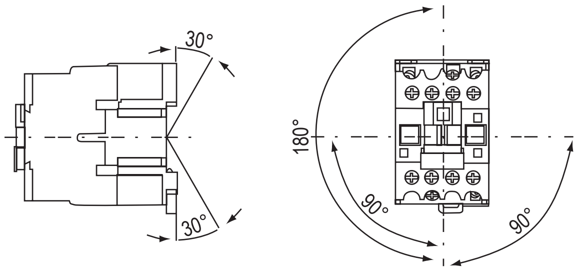
Contactors(Continued)

Cat.no	Ref.No	Description	Pack./MOQ
FTC30A311M2	F101605	Contactor 30 kW -400V + Iaux NO Coil 42V 50/60Hz	5
FTC30A311M9	F101606	Contactor 30 kW -400V + Iaux NO Coil 48V 50/60Hz	5
FTC30A311M1	F101607	Contactor 30 kW -400V + Iaux NO Coil 24V 50/60Hz	1
FTC37A311M3	F101608	Contactor 37 kW -400V + Iaux NO Coil 110V 50/60Hz	1
FTC37A311M5	F101609	Contactor 37 kW -400V + Iaux NO Coil 230V 50/60Hz	1
FTC37A311M13	F101610	Contactor 37 kW -400V + Iaux NO Coil 380V 50/60Hz	1
FTC37A311M2	F101611	Contactor 37 kW -400V + Iaux NO Coil 42V 50/60Hz	1
FTC37A311M9	F101612	Contactor 37 kW -400V + Iaux NO Coil 48V 50/60Hz	1
FTC37A311M1	F101613	Contactor 37 kW -400V + Iaux NO Coil 24V 50/60Hz	1
FTC45A311M3	F101614	Contactor 45 kW -400V + Iaux NO Coil 110V 50/60Hz	1
FTC45A311M5	F101615	Contactor 45 kW -400V + Iaux NO Coil 230V 50/60Hz	1
FTC45A311M13	F101616	Contactor 45 kW -400V + Iaux NO Coil 380V 50/60Hz	1
FTC45A311M2	F101617	Contactor 45 kW -400V + Iaux NO Coil 42V 50/60Hz	1
FTC45A311M9	F101618	Contactor 45 kW -400V + Iaux NO Coil 48V 50/60Hz	1
FTC45A311M1	F101619	Contactor 45 kW -400V + Iaux NO Coil 24V	1

Built-in auxiliary contacts

Rated thermal current (1th at T< ℃55)	10A
Rated insulation voltage (Ui) acc. IEC 60947	690A
Utilisation AC 15 acc.IEC	24V-6A, 48V-6A, 120V-3A, 230V-2A, 400V-1.3A, 440V-1.1A, 600V-0.8A
Utilisation acc.cUL/UL	A600
Utilisation DC13 acc.IEC	24V-5A, 48V-1.9A, 125V-0.6A, 250V-0.3A, 440V-0.1A
Short-circuit protection (max fuse class gL/gG)	10A

Installation capabilities



All frames mounting positions positions with maximum six auxiliaries except four auxiliaries in case of Frame 1/Frame 2 at ±30 degrees

Mounting fixations

Frame	1	2	3
Fixing by clipping onto 35+-0.3mm DIN rail (EN50022)	x	x	
Fixing by clipping onto 75+-0.5mm DIN rail (EN50022)			x

Short-circuit

Short- citcuit values, either for gL/gG fuse are:

- Ir according the standard.
- Iq 50 kA at 400V

Protection against short-circuit

Type 1 Corrdination without TOR	(gG type fuse)									
Contact rating (kW)	4	5.5	7.5	11	15	18.5	22	30	37	45
Fuse rating (A)	20	25	25	32	40	50	63	80	80	110

Contactors

Power circuit

Ie at 400V AC3 (A)	Poles	Ith(A)	AC3(kW)				
			230/220V	400/380V	415V	500V	690/660V
9	3	20	2.2	4	4	5.5	5.5
11.5	3	25	3	5.5	5.5	7.5	7.5
15.5	3	25	4	7.5	7.5	7.5	7.5
22	3	32	5.5	11	11	15	15
29	3	40	7.5	15	15	18.5	18.5
35	3	50	11	18.5	18.5	22	30
41	3	60	15	22	30	30	30
55	3	80	18.5	30	37	37	37
66	3	80	22	37	45	55	45
80	3	110	30	45	45	55	45

Electrical endurance

Frame	Contactors range (kW)	Electrical endurance*
1	4, 5.5, 7.5, 11	0.75 *(AC3 @ 400V) (10^6cycles)
2	15, 18.5	
3	22, 30, 37, 45	

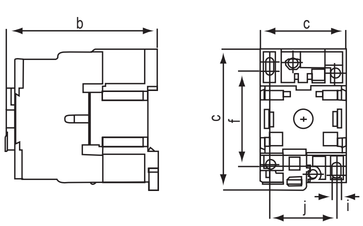
Max. operational rate

Dual frequency coil Duty	Unit	Frame 1	Frame 2	Frame 3
		AC	AC	AC
No load	Cycles/h	3600	3600	3600
AC3 with rated power	Cycles/h	900	900	900
AC4 with rated power	Cycles/h	150	150	120

Electrical endurance of built-in auxiliary contacts

Frame	Contactors range (kW)	Mechanical endurance*
1	4, 5.5, 7.5, 11	6
2	15, 18.5	4 (10^6cycles)
3	22, 30, 37, 45	

Dimensions



Overall dimensions shall be measured as per the diagram below

Device dimensions(mm) within- ± 2 mm tolerance

3 Phase devices		Frame 1		Frame 2		Frame 3	
Contactor rating (kW)		4-7.5	11	15	18.5	22-37	45
Width	(a)	46	46	56	56	76	85
Depth	(b)	80	85	94	98	112	120
Height	(c)	74	74	84	84	127	127

Device dimensions (mm)

Diameter	(i)	4.5	4.5	4.5	4.5	6.5	6.5
	(j)	34/35	34/35	40	40	40	40
	(f)	50/60	50/60	50/60	50/60	100/110	100/110

Thermal Overload Relays

Thermal overload relay (TOR)

TOR mounting bracket

Cat.no	Ref.No	Range	Pack./MOQ
FTC1 0.16	F101620	0.1-0.16	5
FTC1 0.25	F101621	0.16-0.25	5
FTC1 0.40	F101622	0.25-0.40	5
FTC1 0.63	F101623	0.40-0.63	5
FTC1 1.00	F101624	0.63-1.0	5
FTC1 1.6	F101625	1.0-1.6	5
FTC1 2.0	F101626	1.25-2.0	5
FTC1 2.5	F101627	1.60-2.50	5
FTC1 4.0	F101628	2.50-4.0	5
FTC 6.0	F101629	4.0-6.0	5
FTC1 8.0	F101630	5.5-8.0	5
FTC1 10.0	F101631	7.0-10.0	5
FTC1 13.0	F101632	9.0-13.0	5
FTC 18.0	F101633	12.0-18.0	5
FTC 25.0	F101634	17.0-25.0	5
FTC1 32.0	F101635	23-32	5
FTC 36.0	F101636	28-36	5
FTC 32.0	F101637	23-32	1
FTC1 40.0	F101638	30-40	1
FTC 50.0	F101639	37-50	1
FTC 65.0	F101640	48-65	1
FTC 70.0	F101641	55-70	1
FTC 80.0	F101642	63-80	1
FTC1	F101643	Relay bracket for 9A contactor	5
FTC2	F101644	Relay bracket for 35A contactor	5

Technical features

Relay settings and trip classes

Type	Ranges(A)	Trip class	Contactor frame
FTC1-25	0.1-0.16, 0.16-0.25, 0.25-0.40, 0.40-0.63, 0.63-1, 1-1.6, 1.25-2, 1.6-2.5, 2.5-4, 4-6, 5.5-8, 7-10, 9-13, 12-18, 17-25	Class 10	Frame 1
FTC2-36	23-32, 28-36	Class 10	Frame2
FTC3-80	23-32, 30-40, 37-50, 48-65, 55-70, 63-80	Class 10	Frame3

Built-in auxiliary contacts

Rated thermal current (1th at θ<55℃)	5A
Rated insulation voltage (Ui)	690V
Utilisation AC15	
IEC 60947-5-1	120V-3A, 230V-1.5A, 400V-0.95A,
	440V-0.75A, 500V-0.72A, 600V-0.6A
UL-CSA	B600
Utilisation DC13	
IEC 60947-5-1	120V-0.22A, 240V-0.1A
UL/cUL	R 300
Short -circuit protection (max fuse class gl./gG w/o welding)	6A

Thermal Overload Relays

Mechanical and electrical endurance

Parameters	Units	Thermal overload relay
Mechanical duarability relayAuxiliary	Million cycles	0.5
Electrical durability	Million cycles	0.2

Product features

- Thermal protection against balanced overload.
- Three-pole differential (phase unbalance protection).
- Automatic ambient temperature compensation.
- Front mounted selector for choosing utilization current.
- Auto reset and manual reset.
- Manual trip lever (tripping test).
- Tripping indicator (0-1).
- IP2X confirming to VDE 0106 protection against direct finger contact.
- IEC 60947-4-1-IP10 for terminals.

Short-circuit

Short - circuit values. either for gL/gG fuse are:
Ir according the standard. Iq 50 kA at 400V

		Frame 1															Frame 2			Frame 3				
Coord. type 1	TOR rate (A)	0.10-0.16	0.16-0.25	0.25-0.4	0.4-0.63	0.63-1	1-1.6	1.25-2	1.6-2.5	2.5-4	4-6	5.5-8	7-10	9-13	12-18	17-25	23-32	28-36	23-32	30-40	37-50	48-65	55-70	63-80

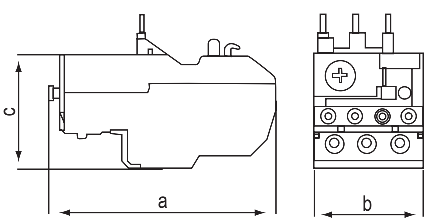
Protection against short-circuit

		Frame 1															Frame 2			Frame 3				
Fuse to be used with selected relay (gL/Gg)	A	2	2	2	2	4	4	6	6	10	16	20	20	25	35	50	63	80	63	100	100	100	125	125
Fuse to be used with selected relay (aM)	A	0.25	0.5	1	1	2	2	4	4	6	8	12	12	16	20	25	40	40	40	40	63	63	80	80

Coordinated with contactor

		Frame 1															Frame 2			Frame 3				
Tor ratings		0.10-0.16	0.16-0.25	0.25-0.4	0.4-0.63	0.63-1	1-1.6	1.25-2	1.6-2.5	2.5-4	4-6	5.5-8	7-10	9-13	12-18	17-25	23-32	28-36	23-32	30-40	37-50	48-65	55-70	63-80
Contactor ratings	kW	4	4	4	4	4	4	4	4	4	4	4	4	5.5	7.5	11	15	18.5	30	30	30	37	37	45
TOR (gL/gG fuse)	A	2	2	2	2	4	4	4	6	10	16	20	20	25	32	40	63	80	63	80	80	80	100	125

Dimensions



Type	a	b	c
CBR 1-25	92	44	42
CBR 2-36	92	54	59
CBR 3-80	115	70	54

6
Contactors & Overload Relays

Thermal Overload Relays

Standards

IEC/EN 60947-1	General rules
IEC/EN 60947-4-1	Electromechanical contactors and starters
IEC/EN 60947-5-1	Electromechanical contactors circuit devices
EN 50012	Terminal marking and distinctive number for auxiliary contacts of particular contactors.
EN50005	Terminal marking and distinctive number General rules.
IEC 60068-2-6	Test FC and guidance : Vibration (sinusoidal)
IEC 60068-2-30	Test Db and guidance: Damp heat, cyclic(12+12 hour cycle)
IEC 60068-2-27	Test Ea: Shocks
VDE 0106	IP2X Protection against direct finger contact
IEC 60947-4-1/ IEC 60947-5-1	IP10
UL508	Industrial control equipment
LU486E	Equipment wiring terminal for use with aluminum or copper conductors
UL-94	Standard for safety test for flammability of plastic materials for parts in devices and appliances

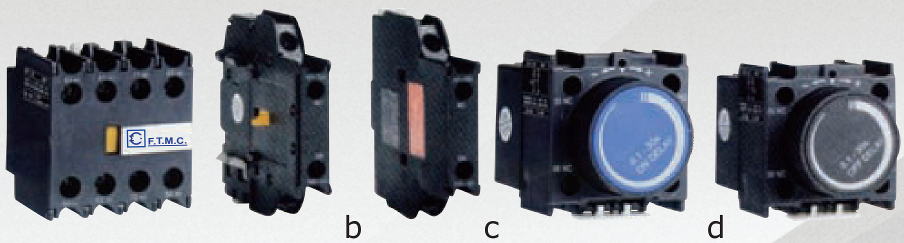
IP Protection

IP20	As per VDE 0106
IP10	As per IEC 60947--4-1/ IEC 60947-5-1

Climatic conditions

	All frames
Ambient termperature	-5℃ ÷ +40℃
Damp heat, steady state IEC 60068-2-30	12+12 hrs cycle, 66 cycle upper +40℃

Accessories



a b c d

	Cat.no	Ref.No	Description	Pack./MOQ
Front mounted block (a)	FTC221	F101645	1NO + 1NC	10
	FTC422	F101646	2NO + 2NC	5
	FTC431	F101647	3NO + 1NC	5
	FTC413	F101648	3NC + 1NO	5
	FTC404	F101649	4NC	5
	FTC440	F101650	4NO	5
	FTC220	F101651	2NO	10
	FTC202	F101652	2NC	10
Lateral block (b)	FTCL11	F101653	1NO + 1NC	10
	FTC20	F101654	2NO	10
Mechanical interlock	FTC-A	F101655	For 9 to 35A contactor	5
	FTC-B	F101656	For 41 to 66A contactor	1
	FTC-C	F101657	For 80A contactor	1
On delay (c) pneumatic timer	FTC-30C	F101658	0.1-30	5
	FTC-180C	F101659	10-180	5
Off delay (d) pneumatic timer	FTC-30D	F101660	0.1-30	5
	FTC-180D	F101661	10-180	5

Mechanical and electrical endurance

Parameters	Units	Lateral block	Frontal block	Pneumatic timer	Mechanical interlock
Mechanical durability	Milion cycles	6.0	6.0	6.0	6
Electrical durability	Milion cycles	0.2	0.2	0.2	

Mechanical and electrical endurance

Product	Width mm	Depth mm	Height mm
Lateral block	17.5	72	73
Mechanical interlock	25.5	54	54
Pneumatic timer	45	61	45
Front/Top mounted block 4p	45	48	38.5
Front/Top mounted block 2p	25.5	48	38.5

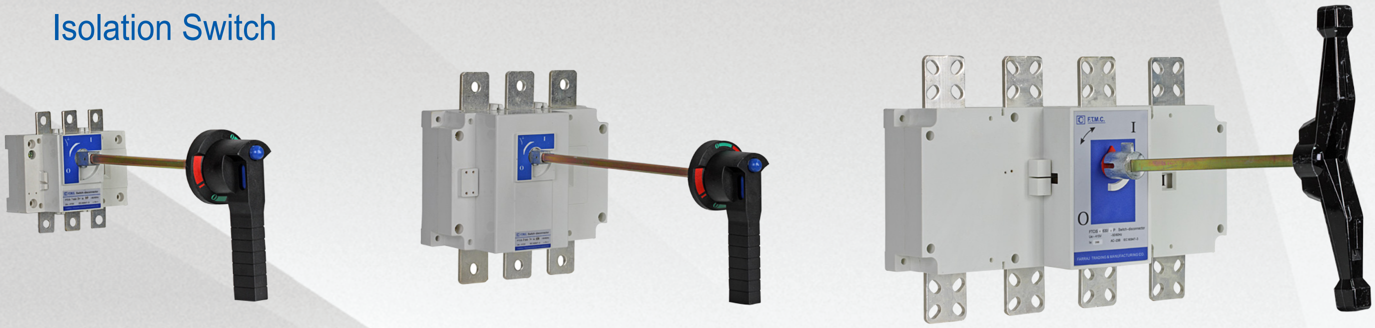
Overall dimensions shall be measured per diagram and there is not included the packaging dimensions.

Technical features

Parameters	Units	Lateral block	Frontal block	Pneumatic timer
Contact configuration		1NO+1NC& 2NO	1NO+1NC, 2NO.2NC, 2NO+2NC, 3NO+1NC, 3NC+1NO, 4NC.4NO	1NO+1NC (for both On delay and Off delay timers)
Rated thermal current (1th at < ℃50)	A	10	10	10
Rated insulation voltage (Ui)	V	690	690	690
Utilision AC 15-IEC	V-A	24V-6A, 48V-6A, 120V-3A, 230V-2A, 400-1.3A, 400-1.1A, 600V-0.8A		
UL& (cUL us)	-	A600	A600	A600
Utilisation DC13-IEC	V-A	24V-5A, 48V-1.9A, 125V-0.6A, 250V-0.3A, 440V-0.1A		
Short-circuit protection (max fuse class gG)	A	10	10	10
Type of terminal	-	Screw palate	Screw palate	Screw palate
Timing range (penumatic timer)				0.1-30 s, 10-180 s (for each -On delay and Off delay)
Repeat accuracy for(penumatic timer) for comtact blocks	%	NA	NA	+ / - 5%
Accuracy valid for (pneumatic timer) for setting range (drift upto. 0.5 million operating cycles)	%			+ / - 5%

F.T.M.C.TYPE FTCIS

Isolation Switch



FTCIS-125~1600A Electrical properties and Mechanical Properties

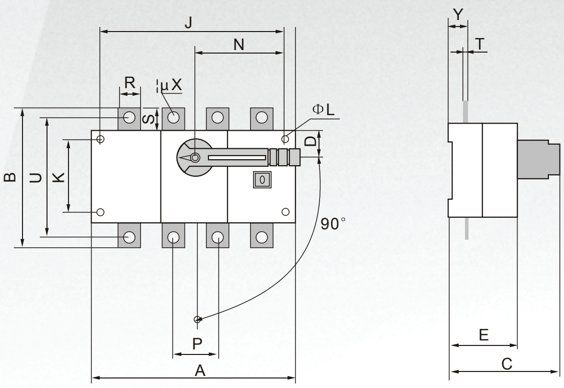
Catalogue No. for 3 Pole		FTCIS3125 ①	FTCIS3160	FTCIS3200	FTCIS3250	FTCIS3315	FTCIS3400	FTCIS3500	FTCIS3630	FTCIS31000 ②	FTCIS31250	FTCIS31600
Ref. No. for 3 Pole		F103316	F103317	F103318	F103319	F103320	F103321	F103322	F103323	F103324	F103325	F103326
Catalogue No. for 4 Pole		FTCIS4125 ①	FTCIS4160	FTCIS4200	FTCIS4250	FTCIS4315	FTCIS4400	FTCIS4500	FTCIS4630	FTCIS41000 ②	FTCIS41250	FTCIS41600
Ref. No. for 4 Pole		F103333	F103334	F103347	F103348	F103349	F103350	F103351	F103352	F103353	F103354	F103355
Conventional heating current (I		125A	160A	200A	250A	315A	400A	500A	630A	1000A	1250A	1600A
Rated insulation voltage (Ui V)		750	750	750	750	1000	1000	1000	1000	1000	1000	1000
Dielectric strength (V)		5000	5000	5000	5000	8000	8000	8000	8000	10000	10000	10000
Rated impaction withstand voltage Uimp KV (Installation sort IV)		8	8	8	8	12	12	12	12	12	12	12
Rated working current Ie(A) 400V	AC21B	125	160	200	250	315	400	500	630	1000	1250	1600
Rated working current Ie(A) 400V	AC22B	125	160	200	250	315	400	500	630	1000	1250	1600
Rated working current Ie(A) 400V	AC23B	125	160	200	250	315	340	425	500	800	1000	1250
Rated working current Ie(A) 750V	DC21	125	160	160	200	315	400	400	500	1000	1000	1600
Rated working current Ie(A) 750V	DC22	125	160	160	160	315	315	315	315	800	800	800
Rated working current Ie(A) 750V	DC23	80	80	100	125	125	125	125	125	400	400	500
Rated working current Ie(A) 220V	AC21B	125	160	200	250	315	400	500	630			
Rated working current Ie(A) 220V	AC22B	125	160	200	250	315	400	400	500			
Rated working current Ie(A) 220V	AC23B	125	125	160	200							
Rated working current Ie(A) 440V	DC21	100	125	160	200	315	400	400	500			
Rated working current Ie(A) 440V	DC22	100	125	160	200	315	400	400	500			
Rated working current Ie(A) 440V	DC23	100	125	160	200							
Motor power P(KW)	400V	63	80	100	132	160	220	280	315	560	560	560
Motor power P(KW)	750V	75	75	90	110	185	185	185	185	475	475	475
Rated short-time withstand current Icw(KA Rms)0.1S/1.0S		20/10	20/10	30/12	30/12	45/20	45/20	50/25	50/25	90/50	90/50	90/50
Rated making capacity Icn (A Rms) AC23B 400V		1250	1250	2000	2000	3150	4000	4000	4000	10000	10000	10000
Rated breaking capacity Icm (A Rms) AC23B 400V		1000	1000	1600	1600	2500	3200	3200	3200	8000	8000	8000
Rated short-circuit making capacity Icm (KA peak value)		12	12	17	17	30	30	40	40	70	70	70
Mechanical life (rotation operation time)		10000	10000	10000	10000	5500	5500	5500	5500	4000	4000	3000
Rated voltage Ue=750V Rated current Ie	COSΦ=0.95 AC21B	1500	1500	1500	1500	750	750	750	750	600	600	450
Rated voltage Ue=750V Rated current Ie	COSΦ=0.65 AC22B	1000	1000	1000	1000	500	500	500	500	400	400	300
Rated voltage Ue=750V Rated current Ie	COSΦ=0.35 AC23B	500	500	500	500	250	250	250	250	200	200	150
Operation moment (Nm)		4	6.5	10	10	14.5	14.5	14.5	14.5	27	27	27
Weight (Kg)	3 poles	1	1	2	2	3.5	3.5	4	4	10.5	10.5	16
Weight (Kg)	4 poles	1.5	1.5	2.5	2.5	4	4	4.5	4.5	13	13	20

① Frame Size Rating 125A available in range 32A, 40A, 50A, 63A, 80A, 100A, 125A.

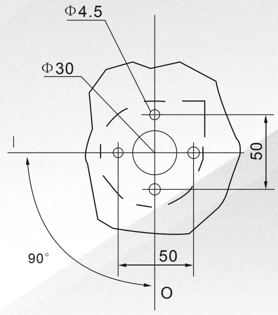
② Frame Size Rating 1000A available in range 800, 1000A.

7 Safety Switch

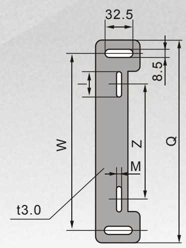
FTCIS125~630 Outline and installation dimensions



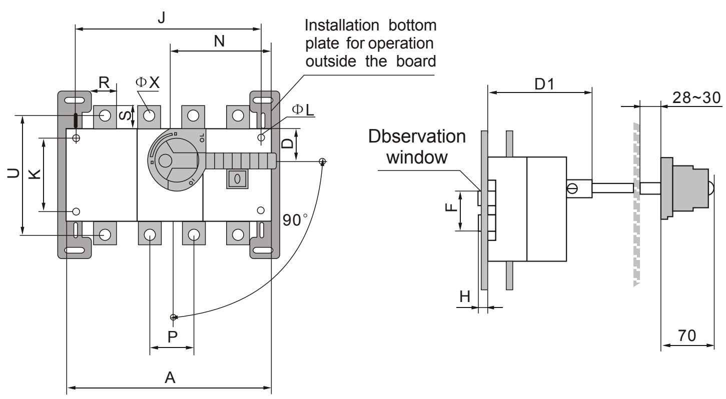
Direct operation of FTCIS125~630



Installation size of handle seat outside board



Installation bottom plate for operation outside the board

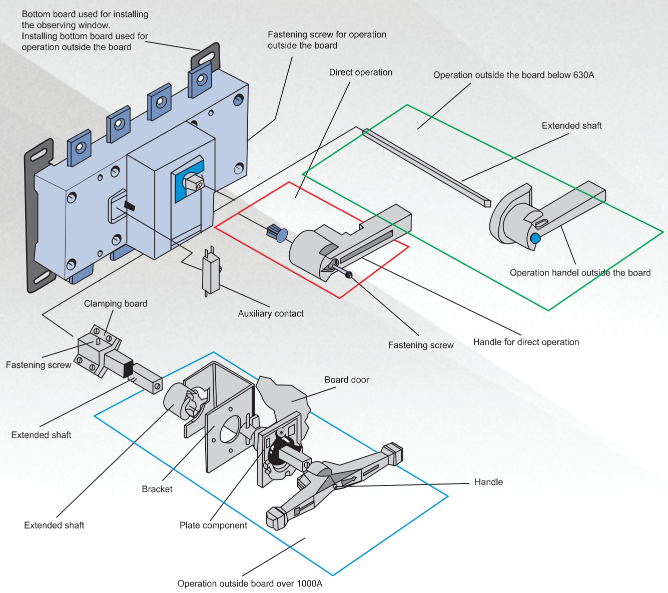


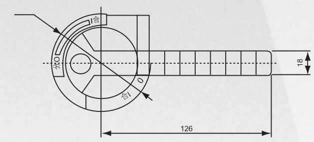
Operation outside FTCIS125~630 board

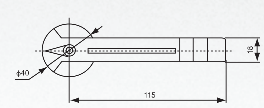
Specification	Dimension of Bottom Board				
	I	M	Z	W	Q
FTCIS125	55	5.5	85	190	218
FTCIS160	55	5.5	85	190	218
FTCIS200	55	5.5	85	190	218
FTCIS250	55	5.5	85	190	218
FTCIS315	60	6.5	130	240	270
FTCIS400	60	6.5	130	240	270
FTCIS500	60	6.5	130	240	270
FTCIS630	60	6.5	130	240	270

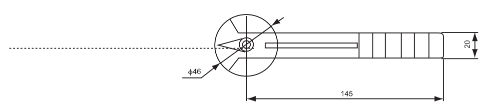
Specification	External Dimension and Installation Dimension																	
	A	B	C	D	D1	E	ΦL	J	K	N	P	R	S	T	U	ΦX	Y	F	H
FTCIS125/3	140	135	120	27	93	73	5.5	120	65	85	36	20	25	3	114	10	24	49	10
FTCIS125/4	170	135	120	27	93	73	5.5	150	65	85	36	20	25	3	114	10	24	49	10
FTCIS160/3	140	135	120	27	93	73	5.5	120	65	85	36	20	25	3	114	10	24	49	10
FTCIS160/4	170	135	120	27	93	73	5.5	150	65	85	36	20	25	3	114	10	24	49	10
FTCIS200/3	180	165	140	35	103	86	7	160	90	115	50	25	30	3.5	134	11	27	79	15
FTCIS200/4	230	165	140	35	103	86	7	210	90	115	50	25	30	3.5	134	11	27	79	15
FTCIS250/3	180	165	140	35	103	86	7	160	90	115	50	25	30	3.5	134	11	27	79	15
FTCIS250/4	230	165	140	35	103	86	7	210	90	115	50	25	30	3.5	134	11	27	79	15
FTCIS315/3	230	234	140	50	138	116	7	210	140	145	65	32	38	5	205	11	37	94	20
FTCIS315/4	290	234	140	50	138	116	7	270	140	145	65	32	38	5	205	11	37	94	20
FTCIS400/3	230	234	185	50	138	116	7	210	140	145	65	32	38	5	205	11	37	94	20
FTCIS400/4	290	234	185	50	138	116	7	270	140	145	65	32	38	5	205	11	37	94	20
FTCIS500/3	230	250	185	50	138	116	7	210	140	145	65	40	45	6	215	12.5	38	94	20
FTCIS500/4	290	250	185	50	138	116	7	270	140	145	65	40	45	6	215	12.5	38	94	20
FTCIS630/3	230	250	185	50	138	116	7	210	140	145	65	40	45	6	215	12.5	38	94	20
FTCIS630/4	290	250	185	50	138	116	7	270	140	145	65	40	45	6	215	12.5	38	94	20

FTCIS1000~1600 Outline and installation dimensions



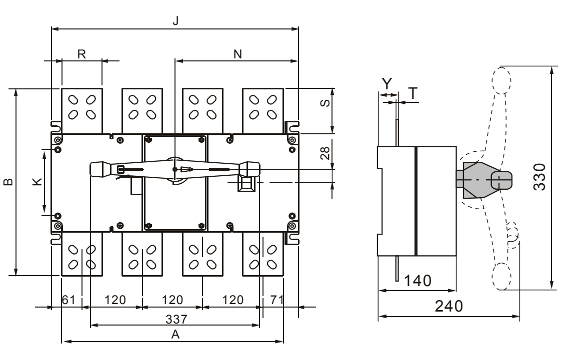




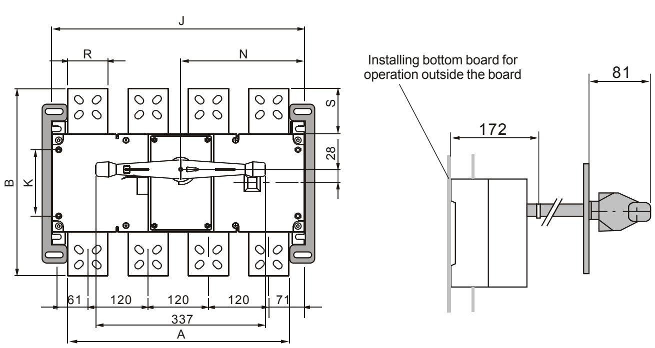


Note: standard length of extended shaft is 310mm

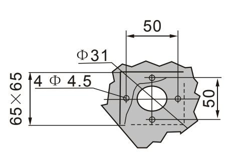
Note: Nominal thermal current of auxiliary contact Ith: 10A



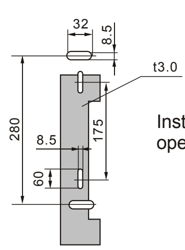
Direct operation of FTCIS1000~1600A



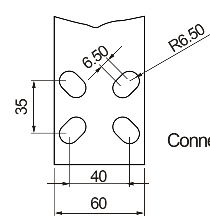
Operation outside FTCIS1000~1600A



Installation size of handle seat outside board



Installation bottom board for operation outside the board



Connecting terminal

Specification	External Dimension and Installation Dimension								
	A	B	J	K	N	R	S	T	Y
FTCIS1000/3	378	328	354	135	173	60	64	8	48
FTCIS1000/4	492	328	440	135	246	60	64	8	48
FTCIS1250/3	378	336	354	135	173	80	68	8	48
FTCIS1250/4	492	336	440	135	246	80	68	8	48
FTCIS1600/3	378	336	354	135	173	80	68	10	49
FTCIS1600/4	492	336	440	135	246	80	68	10	49

F.T.M.C.TYPE ATS (FTCATS1)

Intelligent Dual Power Source Automatic Transfer Switch

Type and implication

FTCATS1 □ □ □ □ / □

- Pole
- R: self-input and self-recover;
- B: self-input without self-recover;
- F: Utility -generator
- A: Terminal type;
- B: loss phase protection
- In-compnay models(G, H)
- Current rating

FTCATS1 automatic transfer switch (ATS) is set the switches and control logic integrated without additional controller, achieve integration of automatic electromechanical switch, voltage detection, frequency detection, communication interface, electrical, mechanical interlocking functions, automatic, electric remote emergency manual control. This is the logical control panel from various logical order to manage the machines, operate with the gearbox to achieve, switching spring motor storage, instantaneous release of the acceleration, rapid access to sub-circuit or circuits conversion, it is obvious by the state security confinement, greatly improved the performance of various electrical and mechanical properties.

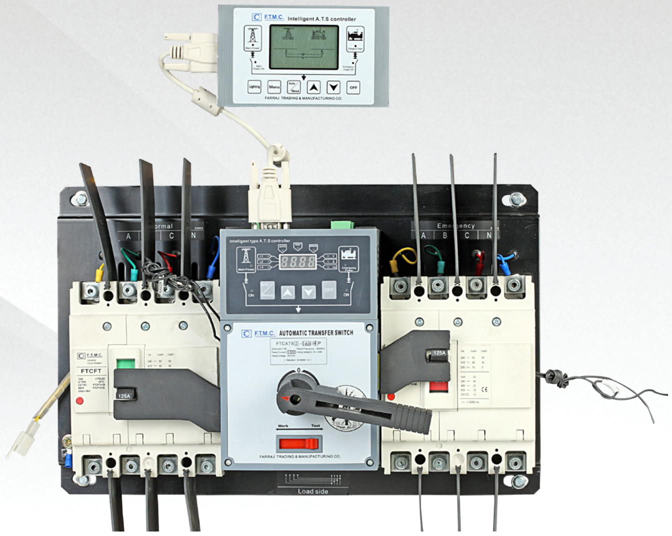
FTCATS1 switches overall design for the metal shell, compact solid.FTCATS1 switches, control of some of the mental shell , the shell sw itching components used fiberglass unsaturated polyester resin manufacturing, with a strong dielectric properties, protection and reliability of the operational safety.

Switch power supply system applicable to changeover the main power supply and backup power supply automatically or two sets load equipment and safety isolation automatically.

Switch appearance is beautiful, creative, simple, small size, the entire function is an ideal choice in different occasions.

F.T.M.C.TYPE ATS (FTCATS2)

Intelligent Dual Power Source Automatic Transfer Switch



Structure

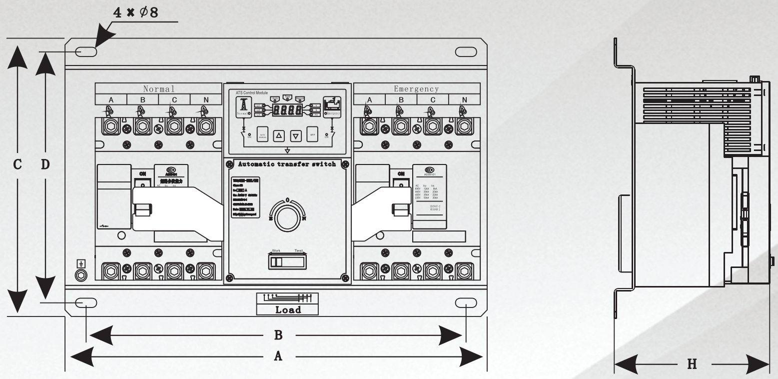
FTCATS2 series ATS consist of two pieces of high breaking capaeity moulded case circuit breakers and inner parts,mechanical interlocks, motor operating driving unit and intelligent controller. It has the protection from short circuit, overloading, over voltage,and phase failure protection by means of transfer another power supply. then to ensure power supply continuously and securely, its performance:

- There provides mechanical interlocks between two breakers and singlechip used in intelligent electrical interlock to form dual protections.
- Protections against over voltage, absent voltage, supply transfer in case of phase failure Intelligent warning.
- Outer free setting of values
- Small volume, convenient installation and operation
- Energy saving, no noise during working.
- Fire protecting device provided, when the fire protection center send a message to auto-controller, both breakers will trip.
- Computer link port provided for remote control, remote adjustment, remote commuication and transmission.

Normal working conditions

- Ambient temperature: upper limit not more than 40 degree, lowest not less than 10 degree, average a day not more than 35 degree;
- Altitude:where there not more than 2000m;
- Atmosphere conditions: relative humidity not more than 50% at ambient temperature 50 degree; at lower temperature higher humidity allowed.

Intelligent Dual Power Source Automatic Transfer Switch



FTCATS Series

Rating	Ref.No.	3 Pole	Ref.No.	4 Pole
20	F101662	FTCATSF3020	F101484	FTCATSF4020
32	F101663	FTCATSF3032	F101485	FTCATSF4032
40	F101664	FTCATSF3040	F101486	FTCATSF4040
50	F101665	FTCATSF3050	F101495	FTCATSF4050
63	F101666	FTCATSF3063	F101431	FTCATSF4063
80	F103363	FTCATSF3080	F103379	FTCATSF4080
100	F103364	FTCATSF3100	F103380	FTCATSF4100
125	F103365	FTCATSF3125	F103381	FTCATSF4125
160	F103366	FTCATSF3160	F103382	FTCATSF4160
160	F103367	FTCATSJ3160	F103383	FTCATSJ4160
200	F103368	FTCATSJ3200	F103384	FTCATSJ4200
250	F103369	FTCATSJ3250	F103385	FTCATSJ4250
250	F103370	FTCATSK3250	F103386	FTCATSK4250
315	F103371	FTCATSK3315	F103387	FTCATSK4315
400	F103372	FTCATSK3400	F103388	FTCATSK4400
400	F103373	FTCATSL3400	F103389	FTCATSL4400
500	F103374	FTCATSL3500	F103390	FTCATSL4500
630	F103375	FTCATSL3630	F103391	FTCATSL4630
630	F103376	FTCATSN3630	F103392	FTCATSN4630
700	F103377	FTCATSN3700	F103393	FTCATSN4700
800	F103378	FTCATSN3800	F103394	FTCATSN4800

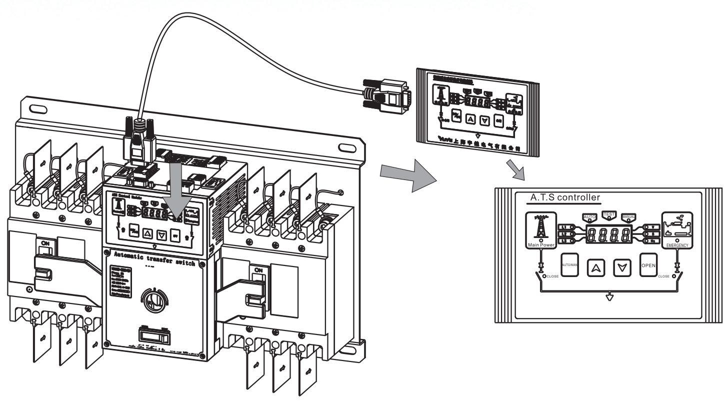
Products Dimension Table

Dimension / Rating	A		B		C	D	H
	3P	4P	3P	4P			
20-160A	335	395	295	355	255	230	141
160-250A	365	435	325	395	255	230	155
250-400A	491	587	431	527	330	300	215
400-630A	524	640	464	580	330	300	215
630-800A	580	720	520	660	340	310	215

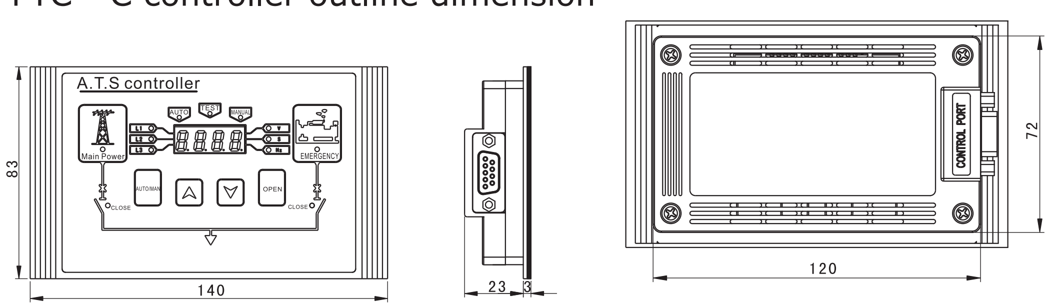
Intelligent Dual Power Source Automatic Transfer Switch

FTC-C type controller

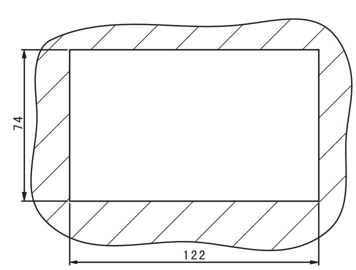
FTC-C-controller is a digital display of sub-controller, it can be installed in the control cabinet panel through a 2m-long serial data line and B-type controller to connect, connect, after switching on the body The B-type controller for all operations and functions are displayed in a stop on state (that is, the body switches off the display automatically) external controller begin to wotk, the user can not open the doors of the control cabinet through an external controller The interface can be observed in the state of ATS and switch on the control of the operation. Split controller with the operation of the switch body is identical to the B-type controller.



FTC - C controller outline dimension



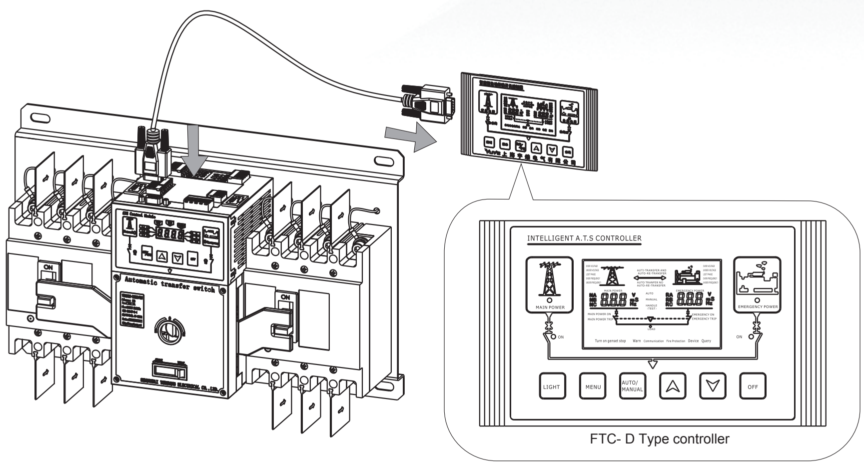
FTC - C controller open hole dimension



Intelligent Dual Power Source Automatic Transfer Switch

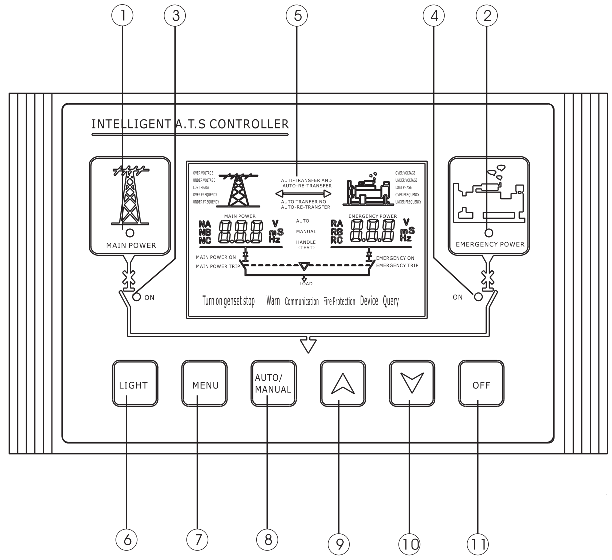
FTC-D type controller

FTC-D-controller is a LCD display of sub-controller, it can be installed in the control cabinet panel tlnuugh a 2m-long serial data lim: and B-type controller 1D cormect, connect, after switching on the body The B-type controller fur all opemtions and functions are displayed in a stop on state (that is, the body switches off the display automatically) external controller begin to work, the user can not open the doors of the control cabinet through an external controller The interface can be observed in the state of ATS and switch on the control of the operation. Split controller with the operation of the switch body is identical to the B-type controller.



FTC- D Type controller

Display and Button Function



Control Panel Sketch Map

1: Normal power supply commonly used instructions, when used with the power supply voltage in the controller set voltage range is light.
2: Normal power supply back-up instructions, with the backup power supply voltage in the controller set voltage range is light.
3: commonly used instructions into power, the power used closed circuit breaker when lights.
4: back-up power supply input instructions, back-up power supply circuit breaker when the lights closed.
5: liquid crystal display window that shows the Chinese controller parameters and status.
6: normal use - manual work under way at OFF gateway; Set mode - used to determine the preservation and modify parameters. (As same use as FTC-B-type controller)
7: normal use of - work Manually switching to the standby power button; Set mode - Scroll down to the menu button and the reduction parameters. (As same use as FTC-B-type controller)
8: normal use - manual work under way to the common power switching button; Set the pattern - for rolling up the menu and the increase in the key parameters. (As same use as FTC-B-type controller)
9: normal use - automatic, manual mode conversion button; Set mode - to enter and exit the menu button. (As same use as FTC-B-type controller)
10: Menu button, can be "normal display - Query menu - the parameters set menu" Select the cycle.
11: key lighting, open or close the LCD backlight and adjust the brightness of the lighting used.

Intelligent Dual Power Source Automatic Transfer Switch

Products Model and Meaning

FTCATS 2 C D 100 - 63 / 3 R

- R: Self-input and Self-recover(Power Grid-Power Grid)
- S: Self-input without Self-recover(Power Grid-Power Grid)
- F: Power Grid-Generation
- 3 — Poles Number:2P、3P、4P
- 63 — Circuit Breaker Rated Current
- 100 — Fram Grading Current
- D — Controller: B / C / D
- C — Circuit breaker: A- GE BREAKERS / B-FTMC BREAKERS
- 2 — Design Serial No.[MCCB
- FTCATS — CB CLASS TYPE

Controller characters and functions

Automatica transfer switch according to the state of voltage source and set up by the user`s working methods, decide whether from a power to another power source. It depends on the function of their configuration controller, including B, C, D four models of the controller, the main functions and characteristics as shown in the table :

Controller	B type controller		C type controller	D type controller
Working Power	AC160-250V 50/60Hz		DC3V（supply by B conrtoller interior ）	
Installation Type	Integral type		Fission type controller panel	
Working Place	Two locations	Three locations		
Operate Type	Auto and Manual	Auto 、 Manual and Remove operation		
Voltage Detection Function	Three-phase Undervoltage Loss phase Detection	Three-phase Overvoltage、Undervoltage、Loss phase Detection		
Frequent Detection Function	No	Over frequent and less frequent testing		
Generator Controller	No	A group of 10A relays contact		
Fire Linkage Controller	No	Passive contact input ,with a group normal passive signal feedback contact		
Changeover Type	Self-input and Self-recover	Set Self-input and Self-recover、Self-input without Self-recover、Power-Generator models		
Display Function	Indication show state	Digital control and power indicator light shows parameters and switch state		Chinese LCD display status
Changeover Delay Time Function	0.5s	0.5-60s continuous adjustment		
Return Delay Time Function	0.5s	0.5-60s continuous adjustment		

F.T.M.C.TYPE Timer , ELR & CBCT

Analogue Time Switched-non quarta stabilised

Description	Type	Minimum programme time	Cat.	Ref. No.
Analogue, 1 channel	24hrs.	30 min.	FTCATS12H	F101668
Analogue, 1 channel	7 days	180 min.	FTCATS17D	F101669

Analogue Time Switches-quartz stabilised

Description	Type	Minimum programme time	Cat.	Ref. No.
Analogue, 1 channel	24hrs.	30 min.	FTCATS32H	F101670
Analogue, 1 channel	7 days	180 min.	FTCATS37D	F101671

Digital Time Switches

Description	Type	Minimum programme time	Cat.	Ref. No.
Digital, 1 channel	Fully prog.	1 min.	FTCATSDG1	F101672
Digital, 1 channel	Fully prog.	1 min.	FTCATSDG2	F101673
Digital, 2 channel	Fully prog.	1 min.	FTCATSDG3	F101674

F.T.M.C. TYPE Fixed Earth Leakage Relay Pluse FTCELR

Feature

Sensitivity Ranges 30 mA , 100 mA , 300 mA

Application

Protection:
- Control Panel
- Feeder / Motor
- Generator
- Transformer
- Electrical Dist.

Core Balance CT

ID (internal diameter):
- 35 mm
- 70 mm
- 120 mm
- 210 mm

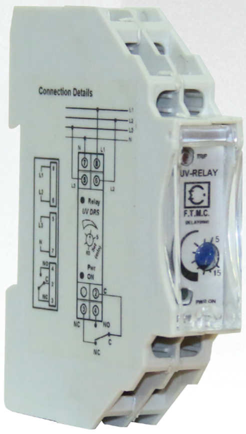
Specification

Aux. Supply	240V / 110VAC 50/60 Hz (-20% +15 %)
Burden on Aux.	< 3 VA
Set Point	Fixed
Delay	Instantaneous
Relay Contacts	Potential Free Contact (NO&NC) Energize on Trip
Contact Rating	6 Amps / 230 V AC/ 28 V DC
Temp	-20℃ to +55 ℃
Humidity	< 95% RH (non condensing)
Reset	Auto / Manual (Factory Set)
Dimension	17.5 x 91 x 64 mm (WxLxH) Fixed FTCELR
Mounting	Din (35 mm rail) / 2 x m4 screw
Weight	175 gms -Fixed FTCELR

Earth Leakage Relays Fixed

Description	Sensitivity	Time delay	Width	Quantity per carton	FTC list number	Ref.No.
Earth leakage relay	Fixed 30mA,	Fixed	36mm	1	FTCELR30mA	F101675
	100mA	Fixed		1	FTCELR100mA	F101676
	300mA	Fixed		1	FTCELR300mA	F101677

F.T.M.C. TYPE Under Voltage Relay with Timer FTCUVRT



Feature

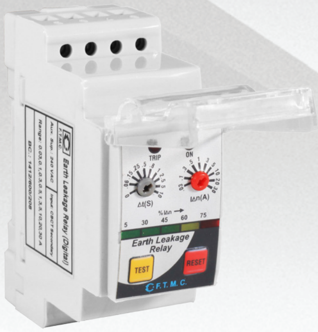
- Consistent Reliability with High Accuracy
- Time Delay User Settable
- LED Indication For Healthy / Faulty Status
- Compact Size 17.5 mm DIN
- Under voltage relay, delayed restart

Specification

System	3 Phase 4 wire/1 Phase system
Burden on Aux.	< 3 VA
Nominal Voltage	380 / 415 / 440VAC
Set Point	5 to 15min (Restart time)
Delay	-25% of Nominal Voltage (Factory set)
Relay Contacts	1 Potential Free Contact, (NO, C & NC), (De-Energise on Fault)
Contact Rating	6 Amps / 230 V AC / 28 V DC
Temp	Operating: -10° Cto 55° C, Storage: -20° C to + 75° C
Humidity	< 95% RH (non condensing)
Dimension	75 x17.5 97 mm (L x B x H)
Mounting	Din (35 mm rail)
Weight	75 gms

Description	Cat.	Ref. No.
1 Phase System Under Relay Voltage With Timer	FTCUVRT1P	F103404
3 Phase System Under Relay Voltage With Timer	FTCUVRT3P	F103405

F.T.M.C. TYPE Adjustable Earth Leakage Relay Pluse FTCELR1ADJ



Feature

- State of Art Microcontroller Based Design
- Bar Graph to indicate Leakage Current in percentage
- Consistent reliability with high accuracy
- User programmable Trip Level through Rotary Selector Switch
- User programmable Time Delay through Rotary Selector Switch
- Toroid Open Circuit Detection
- Facility to seal Front cover to avoid tampering of Set points
- Optional : Relay at %50 of set point to caution on Leakage current.
- Sensitivity Ranges: 0.03,0.10,0.30,0.50, 1.0, 3.0,5.0, 10.0,20.0 & 30.0 Amps.

Specification

Aux. Supply	240V / 110VAC 50 / 60Hz (%20- %15+)
Burden on Aux.	< 3 VA
Set Point	0.03,0.1,0.3,0.5,1.0,3.0,5.0,10.0,20.0 & 30.0Amps
Delay	0(< 25mS for Fault current >5xI n),
	60,150,250,500, 800 mSec.,1,2.5,5,10 Sec.
Relay Contacts	Potential Free Contact (NO&NC) Energise on Trip
Resetl	Manual
Trip Relay	80 - %90 of Set Value
Alarm Relay	%50 of Set Value
Contact Rating	6 Amps / 230 V AC/ 28 V DC
Temp	20- C to 55+ C
Humidity	< %95 RH (non condensing)
Dimension	90 x 45 x 75 mm (L x W x H)
Mounting	Din (35 mm rail) / 2 x m4 screw
Weight	300 gms

Earth Leakage Relays   Adjustable trip

Description	Sensitivity	Time delay	Width	Quantity per carton	FTC list number	Ref.No.
Earth leakage relay	Adjustable 30mA	Adjustable	36mm	1	FTCELR1ADJ	F101678

F.T.M.C. TYPE Core Balance CT (FTCBCT)

Feature

- All current ratios available to match FTCELR's
- Slim Design
- Light weight
- Encapsulated FTCBCT
- Terminals are finger proof touch as per IEC
- Highly Cost effective
- Compact in size

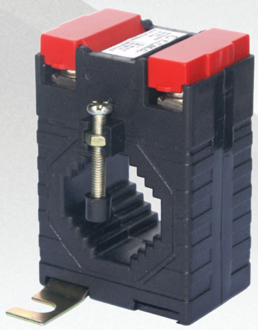
Specification

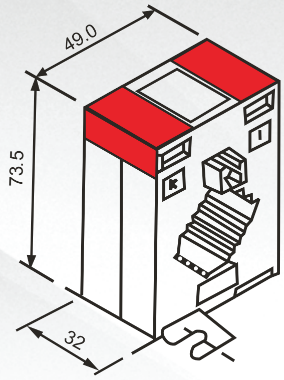
System Voltage	720 V maximumv
Insulation Voltage	3kV for 1 minute
System Frequency	50 Hz or 60 Hz
Max. permissible Current	1KA continuous
	5KA for 1.5 sec.
Terminal Conductor	< 2.5mm
Current ratio	1 / 1000, 1/ 600 any other on request
Distance Between Toroid and relay	< 50 meters
Operating Temperature	- 20℃ to +70℃
Humidity	< 95% RH (non condensing)
Enclosure	Flame retardant glass filled ABS
Complaint with	IEC 44 -1 and IEC185
Mounting	Four Fixing Slots

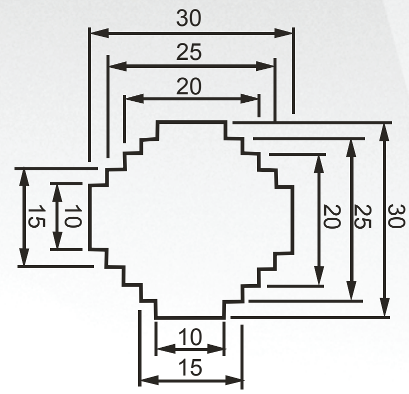
Current Transformers(core balance)

Description	Inner Dimension	Quantity per carton	Catalog	Ref.No.
Current Transformer	30mm diameter	1	FTC ELRCT30	F101679
	35mm diameter	1	FTC ELRCT35	F101680
	70mm diameter	1	FTC ELRCT70	F101681
	105mm diameter	1	FTC ELRCT105	F101682
	140mm diameter	1	FTC ELRCT140	F101683
	210mm diameter	1	FTC ELRCT210	F101684
	70mm x 175mm	1	FTC ELRCT70-175	F101685
	115mm x 305mm	1	FTC ELRCT115-305	F101686
	150mm x 350mm	1	FTC ELRCT150-350	F101687
	200mm x 500mm	1	FTC ELRCT200-500	F101688

Current Transformer FTCCT FRAME 1 CT







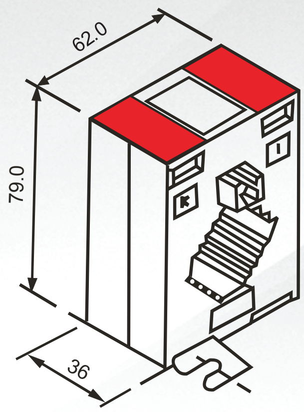
Selection Chart

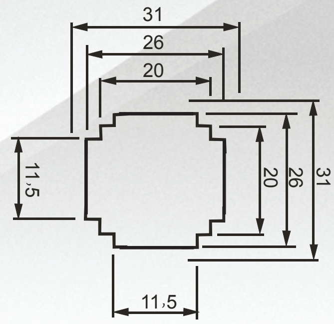
RATIO	Ref.No.		1.25 VA	2.5 VA	5 VA
5/60A	F101689	CLASS	3	-	-
5/75A	F101690	CLASS	3	-	-
5/80A	F101691	CLASS	3	-	-
5/100A	F101692	CLASS	1	-	-
5/125A	F101693	CLASS	1	-	-
5/150A	F101694	CLASS	1	3	-
5/160A	F103131	CLASS	-	-	1
5/200A	F101695	CLASS	-	1	-
5/250A	F101696	CLASS	-	1	-
5/300A	F101697	CLASS	-	1	3
5/400A	F101698	CLASS	-	-	1
5/500A	F101699	CLASS	-	-	1
5/600A	F101700	CLASS	-	-	1

FEATURES

- High quality material, flame retarding and self extinguishing.
- Apertures accepting a wide range of busbar size
- Easy Busbar Mounting
- CTs are ultrasonically welded and are unbreakable.
- Terminals are finger proof touch as per IEC class
- Highly Cost effective
- Compact in size

Current Transformer FTCCT FRAME 2 CT





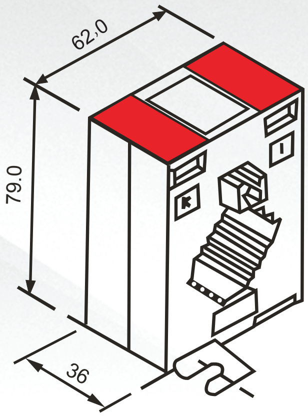
Selection Chart

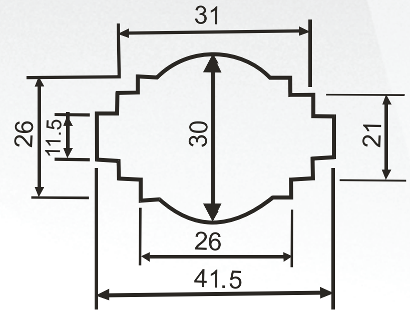
RATIO	Ref.No.		1.25 VA	2.5 VA	5 VA	10 VA
50/5A	F101701	CLASS	3	-	-	-
60/5A	F101702	CLASS	1	-	-	-
75/5A	F101703	CLASS	1	-	-	-
80/5A	F101704	CLASS	1	-	-	-
100/5A	F101705	CLASS	-	-	1	-
125/5A	F101706	CLASS	-	-	1	-
150/5A	F101707	CLASS	-	-	1	-
200/5A	F101708	CLASS	-	-	1	-
250/5A	F101709	CLASS	-	-	1	-
300/5A	F101710	CLASS	-	-	1	-
400/5A	F101711	CLASS	-	-	1	-
500/5A	F101712	CLASS	-	-	1	-
600/5A	F101713	CLASS	-	-	1	-
750/5A	F101714	CLASS	-	-	1	-

FEATURES

- High quality material, flame retarding and self extinguishing.
- Apertures accepting a wide range of busbar size
- Easy Busbar Mounting
- CTs are ultrasonically welded and are unbreakable.
- Terminals are finger proof touch as per IEC class
- Highly Cost effective
- Compact in size

Current Transformer FTCCT FRAME 3 CT





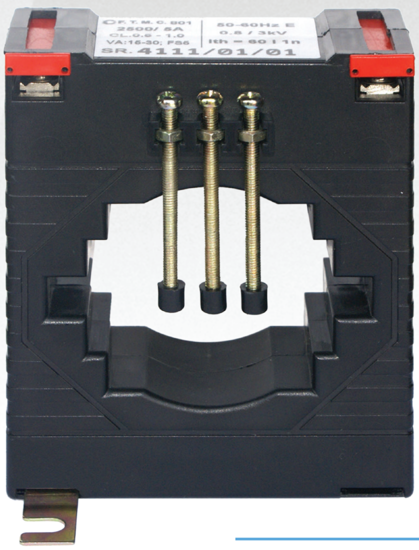
Selection Chart

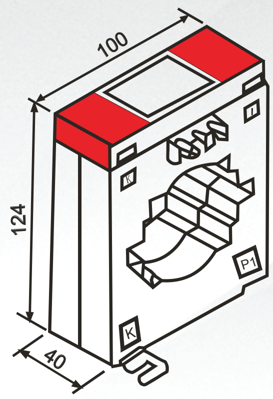
RATIO	Ref.No.		2.5 VA	5 VA	7.5 VA
150/5A	F101715	CLASS	1	-	-
200/5A	F101716	CLASS	-	1	-
250/5A	F101717	CLASS	-	1	-
300/5A	F101718	CLASS	-	1	-
400/5A	F101719	CLASS	-	1	3
500/5A	F101720	CLASS	-	-	1
600/5A	F101721	CLASS	-	-	1
750/5A	F101722	CLASS	-	-	1
800/5A	F101723	CLASS		-	1

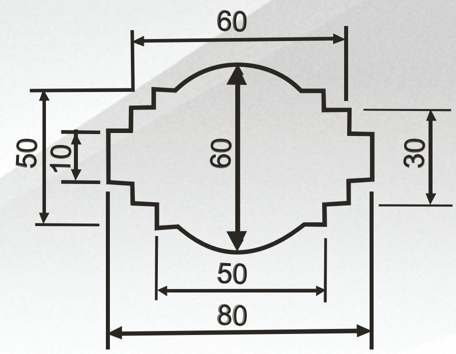
FEATURES

- High quality material, flame retarding and self extinguishing.
- Apertures accepting a wide range of busbar size
- Easy Busbar Mounting
- CTs are ultrasonically welded and are unbreakable.
- Terminals are finger proof touch as per IEC class
- Highly Cost effective
- Compact in size

Current Transformer FTCCT FRAME 4 CT







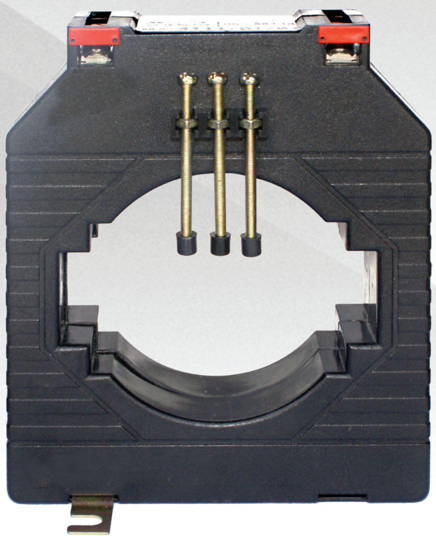
Selection Chart

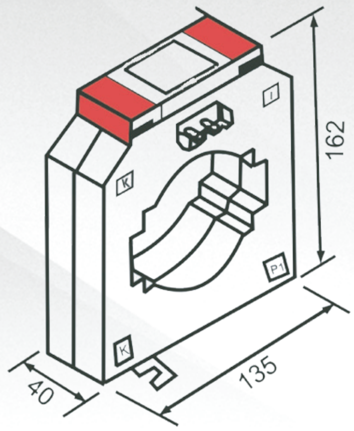
RATIO	Ref.No.		5 VA	7.5 VA	10 VA	15 VA
400/5A	F101724	CLASS	0.5	1	-	-
500/5A	F101725	CLASS	0.5	1	-	-
600/5A	F101726	CLASS	0.5	1	-	-
750/5A	F101727	CLASS	-	-	0.5	1
800/5A	F101728	CLASS	-	-	0.5	1
1000/5A	F101729	CLASS	-	-	0.5	1
1200/5A	F101730	CLASS	-	-	0.5	1
1250/5A	F101731	CLASS	-	-	0.5	1
1500/5A	F101732	CLASS	-	-	0.5	1
1600/5A	F101733	CLASS	-	-	0.5	1
2000/5A	F101734	CLASS	-	-	0.5	1

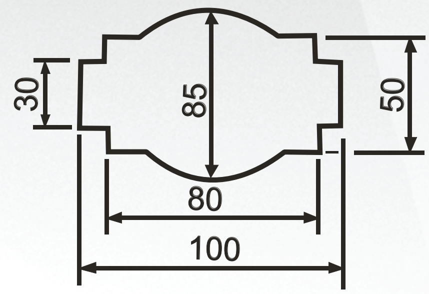
FEATURES

- High quality material, flame retarding and self extinguishing.
- Apertures accepting a wide range of busbar size
- Easy Busbar Mounting
- CTs are ultrasonically welded and are unbreakable.
- Terminals are finger proof touch as per IEC class
- Highly Cost effective
- Compact in size

Current Transformer FTCCT FRAME 5 CT







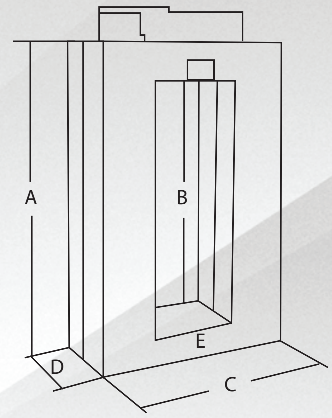
Selection Chart

RATIO	Ref.No.		5 VA	10 VA	15 VA	30 VA
100/5A	F103127	CLASS	1	-	-	-
200/5A	F103128	CLASS	1	-	-	-
300/5A	F103129	CLASS	1	-	-	-
400/5A	F101735	CLASS	0.5	-	-	-
600/5A	F101736	CLASS	0.5	1	-	-
500/5A	F101737	CLASS	0.5	1	-	-
750/5A	F101738	CLASS	-	0.5	1	-
800/5A	F101739	CLASS	-	0.5	1	-
1000/5A	F101740	CLASS	-	-	0.5	-
1200/5A	F101741	CLASS	-	-	0.5	-
1250/5A	F101742	CLASS	-	-	0.5	-
1500/5A	F101743	CLASS	-	-	0.5	-
1600/5A	F101744	CLASS	–	–	–	-
2000/5A	F101745	CLASS	–	–	–	1
2500/5A	F101746	CLASS	–	–	–	1
3000/5A	F101747	CLASS	–	–	–	0.5
3200/5A	F103130	CLASS	-	-	1	-
4000/5A	F101748	CLASS	–	–	–	0.5

FEATURES

- High quality material, flame retarding and self extinguishing.
- Apertures accepting a wide range of busbar size
- CTs are ultrasonically welded and are unbreakable.
- Terminals are finger proof touch as per IEC class
- Easy Busbar Mounting
- Highly Cost effective
- Compact in size

Protection Current Transformer Class X



FEATURES:

The range is suitable for metering, protective and class X types and is particularly suited to high current and large busbars, where the rectangular style allows for easy mounting of the current transformer.

SPECIFICATIONS:

- Continuous Thermal current : 1.2 times rated current
- Rct As specified at 75 deg.c
- Insulation Level :1.1 kV / 3 kV
- Insul. Class : E / B
- Rated system voltage 0.72/3kV.
- Frequency range 50-60Hz.

Supplied with M6 screw terminals.

INFORMATION REQUIRED WITH ENQUIRY:

- Current Ratio.
- Rct.
- ID/Prl. Size.
- Imag. At specified Voltage.
- VKP.
- Accuracy Class.
- Accuracy limit factor.
- Size (CTs are available in any busbar size. Therefore please specify:
  - a) Busbar size is required.
  - b) Busbar window dimension required.
  - c) Outside size required.
- Mounting Requirement.
- Terminal position Please specify.

APPLICATIONS:

1.Protection relays
 Earth fault Protection
2.As interposing CT for ratio matching
3.Bushing CT for protection in power transformers
4.Over/under current sensing

Ratio	Ref.No.	Vkp	RCT max @ 75 Deg. C	ID in mm	OD x HT in mm
				B E	A C D
800/5A	F102322	>70 V	< 0.28 Ohms	90 x 25	195x 115, HT: 70
1000/5A	F102323	>100 V	< 0.31 Ohms	90 x 25	195 x 115, HT: 70
1250/5A	F102324	>100 V	< 0.42 Ohms	90 x 25	195 x 120, HT: 60
1600/5A	F102325	>100 V	< 0.45 Ohms	110 x 20	210 x 110, HT: 60
2000/5A	F102326	>100 V	< 0.52 Ohms	110 X 30	200 x 110, HT: 65
2500/5A	F102327	>110 V	< 0.56 Ohms	110 x 30	200 x 110, HT: 65
2500/5A	F102328	>118 V	< 0.62 Ohms	110 x 30	200 x 110, HT: 65
2500/5A	F102329	>124 V	< 0.66 Ohms	110 x 30	200 x 110, HT: 65
3200/5A	F102330	>110 V	< 0.65 Ohms	110 x 60	210 x 160, HT: 60
4000/5A	F102331	>126 V	< 0.75 Ohms	110 x 60	220 x 145, HT: 60

Note: The above dimensions are limiting dimensions. Min & Max is given.
We can also manufacture CT'S as per your specific requirement.

The CT's manufacture by us Conforms to IEC185, BS 7626, BSEN 60044-1 and IEC 60044-1. standards and Type Tested By ASTA

The CT's can be supplied both in Tape wound as well as resin cast

Digital Multimeter With Voltage protection(FTCDMM)

Selection Chart

- State of Art Microcontroller Based Design.
- Relay Out Put for cutoff / Alarm
- User Programmable Alarm Set Point , Time Delay & CT Ratio.
- True RMS measurement.
- Auto Scrolling Facility
- Password protection
- Bar Graph Indication for Load
- ALARM / TRIP: 1) UNDER VOLTAGE 2) OVER VOLTAGE 3) OVER LOAD 4) PHASE SEQUENCE REVERSAL 5) PHASE FAILURE

- Application Protection:
  - Control Panel
  - Distribution Systems
  - Generator Sets
  - Motor Control
  - APFC Panel
  - Energy Management
  - Process Control & SCADA
  - Test Bench

- Advantages
  - To caution on the Load
  - To indentify inefficiency of Machine / Man
  - Reduce Panel Space, Wiring , Installation Time
  - Scale User adjustable reduces inventory

- Parameters
  - Volts: R-Y Voltage, Y-B Voltage, B-R Voltage, R-N Voltage, Y-N Voltage, B-N Voltage
  - Amps : R Phase, Y Phase, B Phase
  - Frequency: System

Selection Chart

System	3 Phase 4 Wire / 3 Phase 3 Wire
Aux. Supply	230V / 110VAC 50/60Hz (-20% +15%)
Burden on Aux.	< 4 VA
Voltage Input	110 / 415 / 440 VAC (L -L) 500 Vmax
Current Input	1 Amps / 5 Amps
Burden on CT	< 0.2 VA
Temp	-20℃ to +55℃
Humidity	< 95% RH (non condensing)
Weight	500 gms
Repeatability	± 0.5%
Dimension	96 x 96mm
	Depth (behind bezzel) : 60 mm
	Panel Cut out : 92 x 92 mm
Accuracy	Voltage : 0.5 % of FS ± 2 Digit
	Current : 0.5 % of FS ± 2 Digit
	Frequency : ± 0.2 Hz
Resolution Voltes	Voltes : 1V
	Hz : 0.1 Hz
	Amps : 0-99:0.1 A, 100-999:1A, >1000:0.01KA
Ref. No.	F101749

Power Analyzer (FTCPA)

Selection Chart

- State of Art Microcontroller Based Design.
- 4 Line Ultra Bright Red LED display to show phase wise & System Parameters on same page.
- Site Programmable CT & PT Ratio.
- True RMS measurement.
- Auto Scrolling Facility.
- Password protection
- EEprom retains Energy Parameters on power fail.
- Monitors Import & Export Energy.
- Computer Interface (RS 485)
- Pulse Output for PLC / SCADA interface
- Optional: Data Logging of all Parameters with Date & Time stamp (site programmable logging time interval).

Application

- Control Panel
- Distribution Systems
- Generator Sets
- Motor Control
- Test Bench
- APFC Panel
- Energy Management
- Process Control & SCADA

PARAMETERS

- Volts : L - L, L - N (Per Phase & Avg.)
- Amps : Per Phase & summation
- Frequency : System
- Power Factor : Per Phase & Avg
- KW : Per Phase & Summation
- KWh : Import, Export & Summation
- KVArh : Capacitive & Inductive
- KVAh : Total
- KVA : Per Phase & Summation
- KVAr : Per Phase & Summation

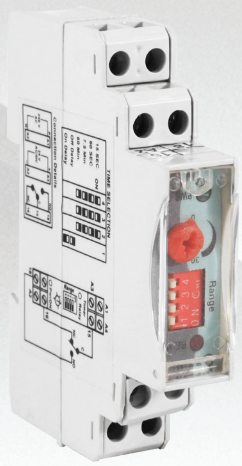
Advantages

- To caution on the Extra Energy Consumption
- To indentify inefficiency of Machine / Man
- Reduce Panel Space, Wiring , Installation Time
- Scale User adjustable reduces inventory

Selection Chart

System	3 Phase 4 Wire / 3 Phase 3 Wire / 1 Phase
Aux. Supply	90 - 270 VAC, 50/60 Hz / DC
Burden on Aux.	< 4 VA
Voltage Input	110 / 415 / 440 VAC (L -L) 500 Vmax
Current Input	1 Amps / 5 Amps
Burden on CT	< 0.2 VA
Temp	0 - 55 ℃
Humidity	< 95% RH (non condensing)
Weight	350 gms
Repeatability	± 0.5%
Dimension	96 x 96mm
	Depth (behind bezzel) : 80 mm
	Panel Cut out : 92 x 92 mm
Accuracy	Voltage : 0.5 % of FS ± 2 Digit
	Current : 0.5 % of FS ± 2 Digit
	Frequency : ± 0.2 Hz
Resolution Voltes	Voltes : 1V
	Hz : 0.1 Hz
	Amps : 0-99:0.1 A, 100-999:1A, >1000:0.01KA
Ref. No.	F103330

Timer FTCTIMER



Feature

- Consistent reliability with high accurancy
- Low cost
- Time Delay user settable (4 Ranges)
- LED indication for Power & Relay status
- Compact size
- ON Delay / OFF Delay modes of operations
- Application
  Protection:
  - Control Panel
  - Feeder / Motor
  - Generator
  - Transformer
  - Electrical Dist.

Selection Chart

Aux. Supply	230VAC 50/60 Hz & 24V AC/DC
	110VAC 50/60 Hz & 24V AC/DC
Time Range	15 /60 Sec. 7.5 / 60 min.
Change Over Time	50 / 100 msec
Relay Contacts	1 Potential Free Contact(NO & NC)
Contact Rating	<100mSec. on power interruption
Temp	-20℃ to +55℃
Humidity	< 95% RH (non condensing)
Accuracy	±5% of full Scale
Repeatability	±0.5%
Dimension	17.5 x 91 x 64 mm (WxLxH)
Mounting	Din (35 mm rail) / 2 x m4 screw
Weight	150 gms
Reset Time	<100mSec. on power interruption
Ref. No.	F101750

Multi Function Timer FTCMFT

Feature

- Consistent reliability with high accurancy
- Low cost
- ON Delay / OFF Delay mode user settable
- LED indication for Power ON & Relay ON
- 12 different Time Ranges
- Compact size
- Application
- Protection:
  - Control Panel
  - Feeder / Motor
  - Generator
  - Transformer
  - Electrical Dist.

Selection Chart

Aux. Supply	230VAC / 415VAC & 24VAC 50/60 Hz /DC
	110VAC 50/60 Hz & 24V AC/DC
Time Range	0-1 / 3 / 10 /30 Sec. / Min. / Hr.
Relay Contacts	1 Potential Free Contact (NO&NC) 2 C/O (optional)
Contact Rating	5 Amps / 230 V AC/ 28 V DC
Temp	-20℃ to +55℃
Humidity	< 95% RH (non condensing)
Accuracy	± 5% of full Scale
Repeatability	± 0.5%
Dimension	22.5 x 77 x 105 mm (WxLxH)
Mounting	Din (35 mm rail) / 2 x m4 screw
Weight	120 gms
Reset Time	<100mSec. on power interruption
Ref. No.	F101751

Star Delta Timer FTCTIMER/SDT

Feature

- Consistent reliability with high accurancy
- Low cost
- Run Up Time & Change Over Time user settable
- LED indication for Star & Delta relay
- Compact size
- Application

  Protection:
  - Control Panel
  - Feeder / Motor
  - Generator
  - Transformer
  - Electrical Dist.

Selection Chart

Aux. Supply	230VAC / 415VAC & 24VAC 50/60 Hz /DC
	110VAC 50/60 Hz & 24V AC/DC
Time Range	0 - 30 / 60 Sec
Change Over Time	50 / 100 msec
Relay Contacts	1 Potential Free Contact(NO&NC)
Contact Rating	5 Amps / 230 V AC/ 28 V DC
Temp	-20℃ to +55℃
Humidity	< 95% RH (non condensing)
Accuracy	± 5% of full Scale
Repeatability	± 0.5%
Dimension	22.5 x 77 x 105 mm (WxLxH)
Mounting	Din (35 mm rail) / 2 x m4 screw
Weight	120 gms
Reset Time	<100mSec. on power interruption
Ref. No.	F101752

Cyclic Timer FTCTIMER/CT

Feature

- Consistent reliability with high accurancy
- Low cost
- Cyclic with Unequal ON & OFF Time
- LED indication for Power ON & Relay ON
- Cyclic ON First / OFF First user settable
- Compact size
- Application
  Protection:
  - Control Panel
  - Feeder / Motor
  - Generator
  - Transformer
  - Electrical Dist.

Selection Chart

Aux. Supply	230VAC & 24 AC/DC
	110VAC & 24V AC/DC
Time Range	1 / 10 Sec. / Min. / Hr.
Relay Contacts	1 C / O Potential Free Contact 2 C/O (optional)
Contact Rating	5 Amps / 230 V AC/ 28 V DC
Temp	-20℃ to +55℃
Humidity	< 95% RH (non condensing)
Accuracy	± 5% of full Scale
Repeatability	± 0.5%
Reset Time	<100mSec. on power interruption
Dimension	22.5 x 77 x 105 mm (WxLxH)
Mounting	Din (35 mm rail) / 2 x m4 screw
Weight	130 gms
Ref. No.	F101753

Forward Reverse Timer FTCTIMER/FR

Feature

- Consistent reliability with high accurancy
- Low cost
- ON Time & Pause Time user settable
- LED indication for Forward & Reverse Relay
- Compact size
- Application

  Protection:
  - Control Panel
  - Feeder / Motor
  - Generator
  - Transformer
  - Electrical Dist.

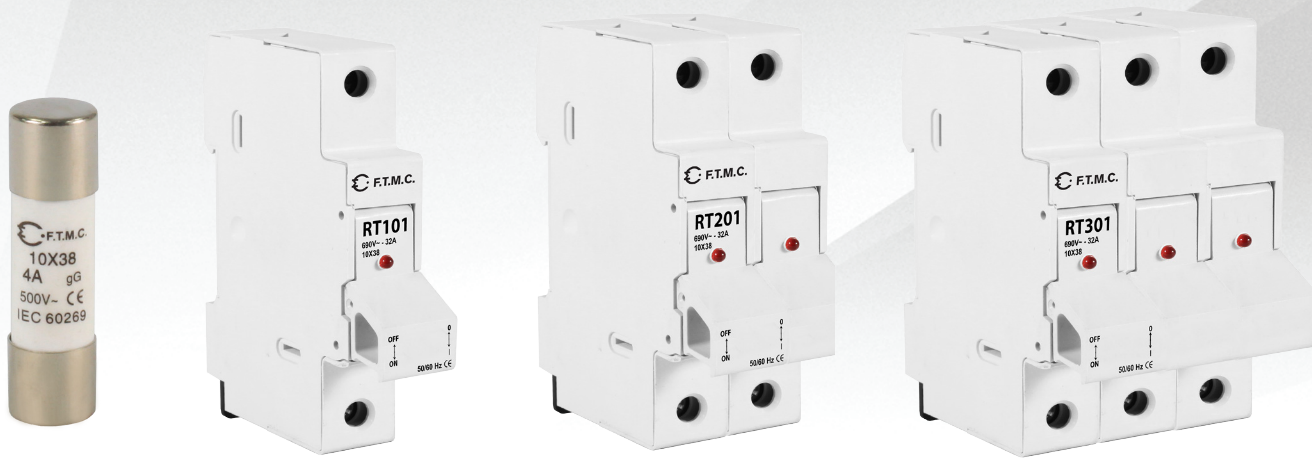
Selection Chart

Aux. Supply	230VAC 50/60 Hz & 24V AC/DC
	110VAC 50/60 Hz & 24V AC/DC
ON Time Range	1 / 2 / 4 / 8 min.
Relay Contacts	1 Potential Free Contact (NO & NC)
Contact Rating	5 Amps / 230 V AC/ 28 V DC
Temp	-20℃ to +55℃
Humidity	< 95% RH (non condensing)
Accuracy	±5% of full Scale
Repeatability	± 0.5%
Reset Time	<100mSec. on power interruption
Dimension	22.5 x 77 x 105 mm (WxLxH)
Mounting	Din (35 mm rail) / 2 x m4 screw
Weight	120 gms
Ref. No.	F101754

F.T.M.C. TYPE FUSE & FUSE HOLDER

Fuse Switch Connector & Fuse with visual tripping indicator

Fuse 500Volt IEC 60269, from 1A-63A



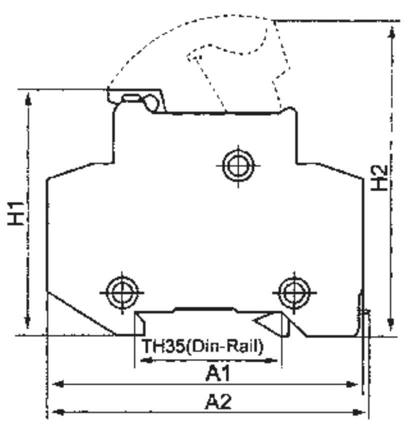
Fuse

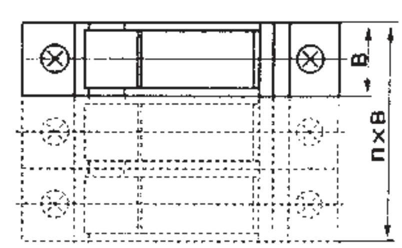
Rating	Part No.	Ref. No.
1	FTCSC01	F100695
2	FTCSC02	F100696
4	FTCSC04	F100697
6	FTCSC06	F100698
8	FTCSC08	F100699
10	FTCSC10	F100700
13	FTCSC13	F100701
16	FTCSC16	F100702
20	FTCSC20	F100703
25	FTCSC25	F100704
32	FTCSC32	F100705
40	FTCSC40	F100706
50	FTCSC50	F100707
63	FTCSC63	F100708

Fuse Holder

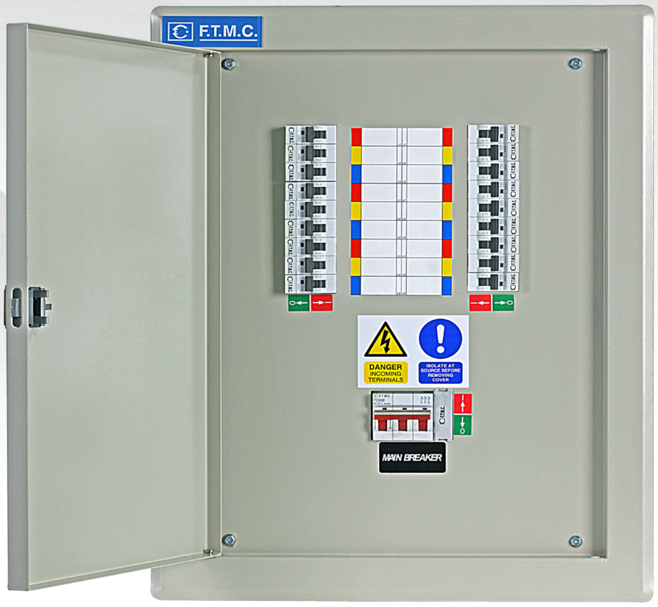
Part No.	Ref. No.	Description
RT101	F100709	Fuse holder 1P
RT201	F100710	Fuse holder 2P
RT301	F100711	Fuse holder 3P

Dimensions





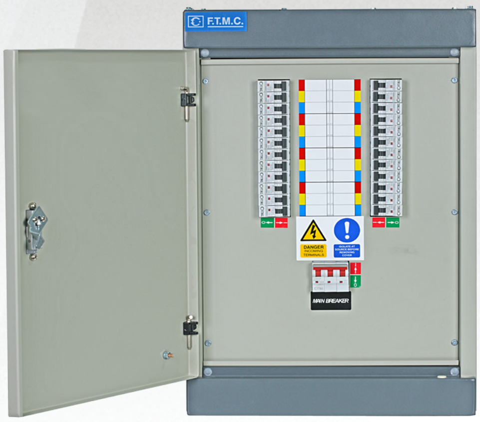
F.T.M.C. Three Phase MCB Distribution Boards (Final DB)

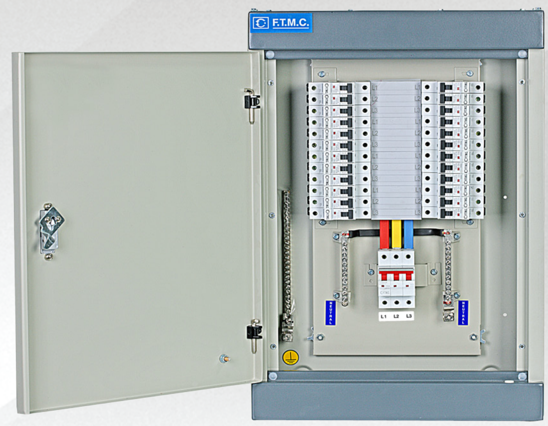


Combining robust high quality engineering with the latest international construction, test and installations standard, F.T.M.C.Bi range of distribution boards has been designed with advice from consultants, contractors, users and distributors.

- The 200 Amp max incomer final DB assembly complies with IEC 1-61439 & 2.
- ASTA certified fully type-tested to standard IEC 1-61439 & 2.
- Main busbar is tested and rated at full load 200 Amp.
- Ingress protection up to IP43 with standard to IEC 60529.
- High quality epoxy polyester powder paint finish in two-tone finishing.
- Flat removable gland plates make drilling and access easier
- The modular design allows for many combinations of incomers, allowing great customer choice increased stocking flexibility.
- The wide range of incomer option includes:
  - MCB or RCCB up to 100 Amp.
  - Switch disconnector up to 125 Amp.
  - MCCB and Moulded Case Switches up to 200 Amp.
- External and internal earthing points are provided.
- Generous cabling area throughout the range.
- 1.5/1.2 mm sheet steel thickness.

F.T.M.C. Three Phase MCB Distribution Board (Surface)





Catalogue Number and Selection Guide

Three phase MCB distribution board "Bi" series

FTMC 100 Bi 4 / DIN - DIN - S

Brand | B/B rating | Series | TP ways | Type of incomer | Type of branch | Mounting

Catalogue number Surface Mounted	Ref.no.	Outgoing ways TP	Dimension (mm) Height A	 Width B	 Depth C
Incomer Type: MCB/ RCCB / Switch – 125A Max Outgoing : DIN					
FTMC 125Bi4-/DIN-DIN-S-2C	F101755	4	520	430	120 ①
FTMC 125Bi6-/DIN-DIN-S-2C	F101756	6	575	430	120
FTMC 125Bi8-/DIN-DIN-S-2C	F101757	8	635	430	120
FTMC 125Bi10-/DIN-DIN-S-2C	F101758	10	720	430	120
FTMC 125Bi12-/DIN-DIN-S-2C	F101759	12	805	430	120
FTMC 125Bi14-/DIN-DIN-S-2C	F101760	14	890	430	120
FTMC 125Bi16-/DIN-DIN-S-2C	F101761	16	975	430	120
Incomer Type: FTCG MCCB – 125A Max Outgoing : DIN					
FTMC 125Bi4-/ FTCG-DIN-S-2C	F101762	4	520	430	120 ①
FTMC 125Bi6-/ FTCG-DIN-S-2C	F101763	6	575	430	120
FTMC 125Bi8-/ FTCG-DIN-S-2C	F101764	8	635	430	120
FTMC 125Bi10-/ FTCG-DIN-S-2C	F101765	10	720	430	120
FTMC 125Bi12-/ FTCG-DIN-S-2C	F101766	12	805	430	120
FTMC 125Bi14-/ FTCG-DIN-S-2C	F101767	14	890	430	120
FTMC 125Bi16-/ FTCG-DIN-S-2C	F101768	16	975	430	120
Incomer Type: FTCF MCCB – 225A Max Outgoing : DIN					
FTMC 225Bi4-/ FTCF-DIN-S-2C	F101769	4	645	430	125 ②
FTMC 225Bi6-/ FTCF-DIN-S-2C	F101770	6	700	430	125
FTMC 225Bi8-/ FTCF-DIN-S-2C	F101771	8	735	430	125
FTMC 225Bi10-/ FTCF-DIN-S-2C	F101772	10	820	430	125
FTMC 225Bi12-/ FTCF-DIN-S-2C	F101773	12	905	430	125
FTMC 225Bi14-/ FTCF-DIN-S-2C	F101774	14	990	430	125
FTMC 225Bi16-/ FTCF-DIN-S-2C	F101775	16	1075	430	125

①Option Depth 125mm
②Option Depth 135mm

F.T.M.C. Three Phase MCB Distribution Board (Surface)

Catalogue Number and Selection Guide

Three phase MCB distribution board "Bi" series

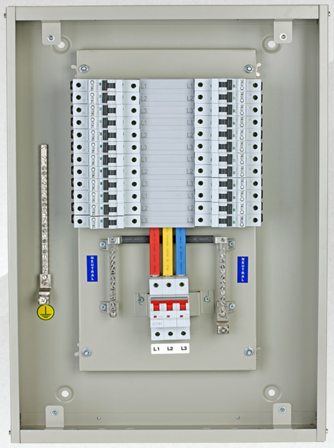
FTMC 100 Bi 4 / DIN - DIN - S

Brand | B/B rating | Series | TP ways | Type of incomer | Type of branch | Mounting

Catalogue number Surface Mounted	Ref.no.	Outgoing ways TP	Dimension (mm) Height A	 Width B	 Depth C
Incomer Type: MCB/ RCCB / Switch – 125A Max Outgoing : DIN					
FTMC 125Bi4-/DIN-DIN-S	F102040	4	520	430	105 ①
FTMC 125Bi6-/DIN-DIN-S	F102041	6	575	430	105
FTMC 125Bi8-/DIN-DIN-S	F102042	8	635	430	105
FTMC 125Bi10-/DIN-DIN-S	F102043	10	720	430	105
FTMC 125Bi12-/DIN-DIN-S	F102044	12	805	430	105
FTMC 125Bi14-/DIN-DIN-S	F102045	14	890	430	105
FTMC 125Bi16-/DIN-DIN-S	F102046	16	975	430	105
Incomer Type: FTCG MCCB – 125A Max Outgoing : DIN					
FTMC 125Bi4-/ FTCG-DIN-S	F102047	4	520	430	105 ①
FTMC 125Bi6-/ FTCG-DIN-S	F102048	6	575	430	105
FTMC 125Bi8-/ FTCG-DIN-S	F102049	8	635	430	105
FTMC 125Bi10-/ FTCG-DIN-S	F102050	10	720	430	105
FTMC 125Bi12-/ FTCG-DIN-S	F102051	12	805	430	105
FTMC 125Bi14-/ FTCG-DIN-S	F102052	14	890	430	105
FTMC 125Bi16-/ FTCG-DIN-S	F102053	16	975	430	105
Incomer Type: FTCF MCCB – 225A Max Outgoing : DIN					
FTMC 225Bi4-/ FTCF-DIN-S	F102054	4	645	430	120 ②
FTMC 225Bi6-/ FTCF-DIN-S	F102055	6	700	430	120
FTMC 225Bi8-/ FTCF-DIN-S	F102056	8	735	430	120
FTMC 225Bi10-/ FTCF-DIN-S	F102057	10	820	430	120
FTMC 225Bi12-/ FTCF-DIN-S	F102058	12	905	430	120
FTMC 225Bi14-/ FTCF-DIN-S	F102059	14	990	430	120
FTMC 225Bi16-/ FTCF-DIN-S	F102060	16	1075	430	120

①Option Depth 125mm
②Option Depth 135mm

F.T.M.C. Three Phase MCB Distribution Board (Flush)



Catalogue Number and Selection Guide

Three phase MCB distribution board "Bi" series

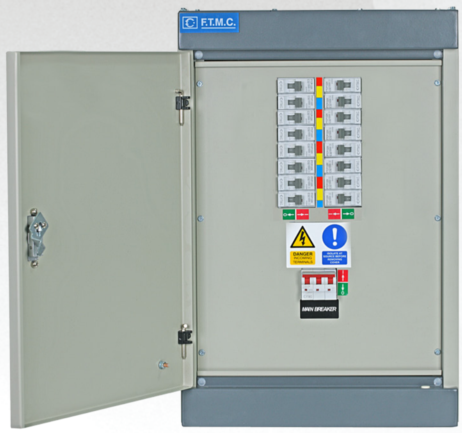
FTMC 100 Bi 4 / DIN - DIN - F

- FTMC: Brand
- 100: B/B rating
- Bi: Series
- 4: TP ways
- DIN: Type of incomer
- DIN: Type of branch
- F: Mounting

Catalogue number Flush Mounted	Ref. No.	Outgoing ways TP	Board dimension (mm) Height A	Width B	Depth C	Flush cover dimension(mm) Height D	Width E
Incomer types: MCB/RCCB/Switch disconnector-125A maximum			Outgoing: DIN				
FTMC 125Bi4-/DIN-DIN-F	F101776	4	520	430③	105①	545	455
FTMC 125Bi6-/DIN-DIN-F	F101777	6	575	430	105	600	455
FTMC 125Bi8-/DIN-DIN-F	F101778	8	635	430	105	660	455
FTMC 125Bi10-/DIN-DIN-F	F101779	10	720	430	105	745	455
FTMC 125Bi12-/DIN-DIN-F	F101780	12	805	430	105	830	455
FTMC 125Bi14-/DIN-DIN-F	F101781	14	890	430	105	915	455
FTMC 125Bi16-/DIN-DIN-F	F101782	16	975	430	105	1000	455
Incomer: FTCG MCCB-125A max		Outgoing: DIN					
FTMC 125Bi4-/ FTCG-DIN-F	F101783	4	520	430③	105①	545	455
FTMC 125Bi6-/ FTCG-DIN-F	F101784	6	575	430	105	600	455
FTMC 125Bi8-/ FTCG-DIN-F	F101785	8	635	430	105	660	455
FTMC 125Bi10-/ FTCG-DIN-F	F101786	10	720	430	105	745	455
FTMC 125Bi12-/ FTCG-DIN-F	F101787	12	805	430	105	830	455
FTMC 125Bi14-/ FTCG-DIN-F	F101788	14	890	430	105	915	455
FTMC 125Bi16-/ FTCG-DIN-F	F101789	16	975	430	105	1000	455
Incomer: FTCF MCCB-225A max		Outgoing: DIN					
FTMC 225Bi4-/ FTCF-DIN-F	F101790	4	645	430③	120②	670	455
FTMC 225Bi6-/ FTCF-DIN-F	F101791	6	700	430	120	725	455
FTMC 225Bi8-/ FTCF-DIN-F	F101792	8	735	430	120	760	455
FTMC 225Bi10-/ FTCF-DIN-F	F101793	10	820	430	120	845	455
FTMC 225Bi12-/ FTCF-DIN-F	F101794	12	905	430	120	930	455
FTMC 225Bi14-/ FTCF-DIN-F	F101795	14	990	430	120	1015	455
FTMC 225Bi16-/ FTCF-DIN-F	F101796	16	1075	430	120	1100	455

①Option Depth 120mm
②Option Depth 125mm
③Option Width 400mm

F.T.M.C. Three Phase MCB Distribution Board (Surface Plug-in Type)



Catalogue Number and Selection Guide

Three phase MCB distribution board "PQ" Series plug-in

FTMC 125 PQ 3 / DIN - P - S

Brand	B/B rating	Series	TP ways	Type of incomer	Type of branch	Mounting

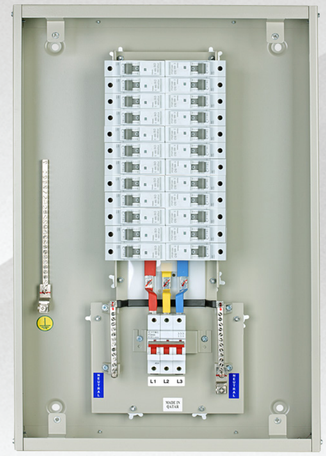
Catalogue number Surface Mounted	Ref.no.	Outgoing ways TP	Dimension (mm) Height A	Width B	Depth C
Incomer types: MCB/RCCB/Switch disconnector-125A maximum			Outgoing: FTCP		
FTMC125PQ312DIN-P-S-2C	F101797	4	520	430③	105 ①
FTMC125PQ318DIN-P-S-2C	F101798	6	595	430	105
FTMC125PQ324DIN-P-S-2C	F101799	8	675	430	105
FTMC125PQ330DIN-P-S-2C	F101800	10	820	430	105
FTMC125PQ336DIN-P-S-2C	F101801	12	900	430	105
FTMC125PQ342DIN-P-S-2C	F101802	14	1000	430	105
FTMC125PQ348DIN-P-S-2C	F101803	16	1100	430	105
Incomer: FTCG MCCB-125A maximum		Outgoing: FTCP			
FTMC125PQ312G-P-S-2C	F101804	4	520	430③	105 ①
FTMC125PQ318G-P-S-2C	F101805	6	595	430	105
FTMC125PQ324G-P-S-2C	F101806	8	675	430	105
FTMC125PQ330G-P-S-2C	F101807	10	755	430	105
FTMC125PQ336G-P-S-2C	F101808	12	900	430	105
FTMC125PQ342G-P-S-2C	F101809	14	1000	430	105
FTMC125PQ348G-P-S-2C	F101810	16	1100	430	105
Incomer: FTCF MCCB-225A maximum		Outgoing: FTCP			
FTMC200PQ312F-P-S-2C	F101811	4	585	430③	120②
FTMC200PQ318F-P-S-2C	F101812	6	650	430	120
FTMC200PQ324F-P-S-2C	F101813	8	735	430	120
FTMC200PQ330F-P-S-2C	F101814	10	850	430	120
FTMC200PQ336F-P-S-2C	F101815	12	965	430	120
FTMC200PQ342F-P-S-2C	F101816	14	1065	430	120
FTMC200PQ348F-P-S-2C	F101817	16	1165	430	120

①Option Depth 120mm

②Option Width 125mm

③Option Width 400mm

F.T.M.C. Three Phase MCB Distribution Board (Flush Plug-in Type)



Catalogue Number and Selection Guide

Three phase MCB distribution board "PQ" Series plug-in

FTMC 125 PQ 4 / DIN - P - F

Brand | B/B rating | Series | TP ways | Type of incomer | Type of branch | Mounting

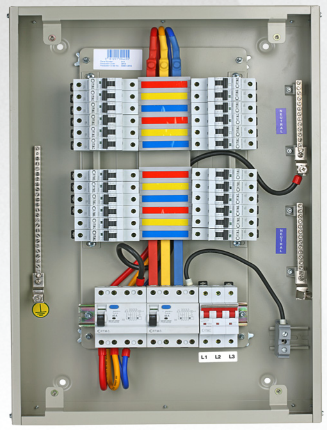
Catalogue number Flush Mounted	Ref. No.	Outgoing ways TP	Board dimension (mm) Height A	Width B	Depth C	Flush cover dimension(mm) Width D	Depth E
Incomer types: MCB/RCCB/Switch disconnector-125A maximum			Outgoing: FTCP				
FTMC125PQ312DIN-P-F	F101818	4	520	430 ③	105 ①	545	455
FTMC125PQ318DIN-P-F	F101819	6	595	430	105	620	455
FTMC125PQ324DIN-P-F	F101820	8	675	430	105	700	455
FTMC125PQ330DIN-P-F	F101821	10	820	430	105	845	455
FTMC125PQ336DIN-P-F	F101822	12	900	430	105	925	455
FTMC125PQ342DIN-P-F	F101823	14	1000	430	105	1025	455
FTMC125PQ348DIN-P-F	F101824	16	1100	430	105	1125	455
Incomer: FTCG MCCB-125A maximum		Outgoing: FTCP					
FTMC125PQ312G-P-F	F101825	4	520	430 ③	105 ①	545	455
FTMC125PQ318G-P-F	F101826	6	595	430	105	620	455
FTMC125PQ324G-P-F	F101827	8	675	430	105	700	455
FTMC125PQ330G-P-F	F101828	10	755	430	105	780	455
FTMC125PQ336G-P-F	F101829	12	900	430	105	925	455
FTMC125PQ342G-P-F	F101830	14	1000	430	105	1025	455
FTMC125PQ348G-P-F	F101831	16	1100	430	105	1125	455
Incomer: FTCF MCCB-225A maximum		Outgoing: FTCP					
FTMC200PQ312F-P-F	F101832	4	585	430 ③	120 ②	610	455
FTMC200PQ318F-P-F	F101833	6	650	430	120	685	455
FTMC200PQ324F-P-F	F101834	8	735	430	120	765	455
FTMC200PQ330F-P-F	F101835	10	850	430	120	875	455
FTMC200PQ336F-P-F	F101836	12	965	430	120	990	455
FTMC200PQ342F-P-F	F101837	14	10656	430	120	1090	455
FTMC200PQ348F-P-F	F101838	16	1165	430	120	1190	455

①Option Depth 120mm

②Option Width 125mm

③Option Width 400mm

F.T.M.C. Three Phase MCB Split Distribution Board (Flush)



Catalogue Number and Selection Guide

Split busbar three phase distribution board "Bi" series

FTMC 100 Bi 2+4 / DIN - DIN - F

Brand | B/B rating | Series | TP ways | Type of incomer | Type of branch | Mounting

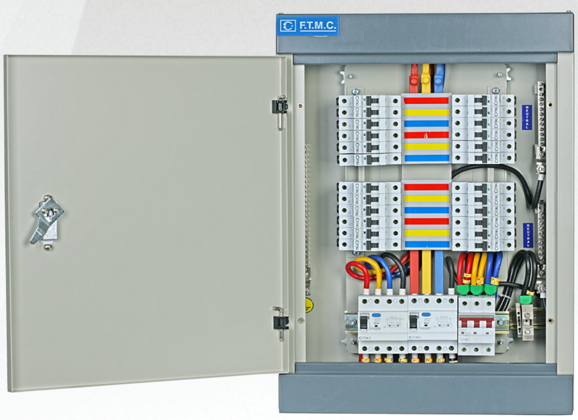
Split busbar three phase distribution board "Bi" series

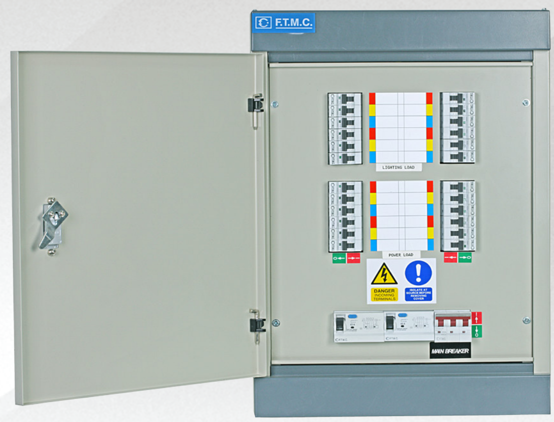
Catalogue number	Ref.No.	Outgoing ways TP	Board dimension (mm)			Flush cover dimension (mm)	
Flush Mounted			Height A	Width B	Depth C	Height D	Width E
Incomer types: MCB/RCCB/Switch disconnector-100A maximum-each split			Branch breakers: DIN				
FTMC 100Bi- 2+2 /DIN-DIN-F	F101839	2+2	510	430②	105①	535	455
FTMC 100Bi- 2+4 /DIN-DIN-F	F101840	2+4	565	430	105	590	455
FTMC 100Bi- 4+4 /DIN-DIN-F	F101841	4+4	620	430	105	645	455
FTMC 100Bi- 2+6 /DIN-DIN-F	F101842	2+6	620	430	105	645	455
FTMC 100Bi- 4+6 /DIN-DIN-F	F101843	4+6	675	430	105	700	455
FTMC 100Bi- 6+6 /DIN-DIN-F	F101844	6+6	730	430	105	755	455
FTMC 100Bi- 2+8 /DIN-DIN-F	F101845	2+8	675	430	105	700	455
FTMC 100Bi- 4+8 /DIN-DIN-F	F101846	4+8	730	430	105	755	455
FTMC 100Bi- 6+8 /DIN-DIN-F	F101847	6+8	785	430	105	810	455
FTMC 100Bi- 8+8 /DIN-DIN-F	F101848	8+8	840	430	105	865	455
FTMC 100Bi- 2+10 /DIN-DIN-F	F101849	2+10	730	430	105	755	455
FTMC 100Bi- 4+10 /DIN-DIN-F	F101850	4+10	785	430	105	810	455
FTMC 100Bi- 6+10 /DIN-DIN-F	F101851	6+10	840	430	105	865	455
FTMC 100Bi- 8+10 /DIN-DIN-F	F101852	8+10	895	430	105	920	455
FTMC 100Bi- 10+10 /DIN-DIN-F	F101853	10+10	950	430	105	975	455
FTMC 100Bi- 2+12 /DIN-DIN-F	F101854	2+12	785	430	105	810	455
FTMC 100Bi- 4+12 /DIN-DIN-F	F101855	4+12	840	430	105	865	455
FTMC 100Bi- 6+12 /DIN-DIN-F	F101856	6+12	895	430	105	920	455

①Option Depth 120mm

②Option Width 400mm

F.T.M.C. Three Phase MCB Split Distribution Boards (Surface)





Catalogue Number and Selection Guide

Split busbar three phase distribution board "Bi" series

FTMC 100 Bi 2+4 / DIN - DIN - S

FTMC	100	Bi	2+4 /	DIN	DIN	S
Brand	B/B rating	Series	TP ways	Type of incomer	Type of branch	Mounting

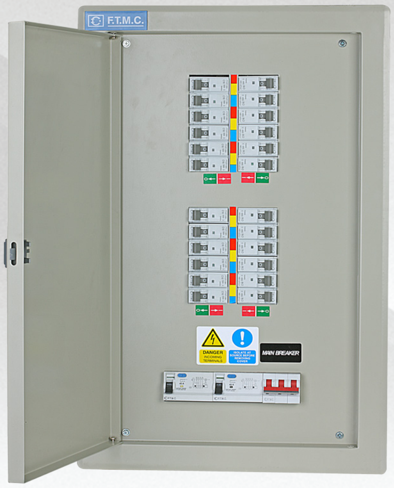
Split busbar three phase distribution board "Bi" series

Catalogue number	Ref.No.	Outgoing ways TP	Board dimension (mm)		
Flush Mounted			Height A	Width B	Depth C
Incomer types: MCB/RCCB/Switch disconnector-100A maximum-each split Branch breakers: DIN					
FTMC 100Bi- 2+2 /DIN-DIN-S-2C	F101857	2+2	510	430 ③	120 ①
FTMC 100Bi- 2+4 /DIN-DIN-S-2C	F101858	2+4	565	430	120
FTMC 100Bi- 4+4 /DIN-DIN-S-2C	F101859	4+4	620	430	120
FTMC 100Bi- 2+6 /DIN-DIN-S-2C	F101860	2+6	620	430	120
FTMC 100Bi- 4+6 /DIN-DIN-S-2C	F101861	4+6	675	430	120
FTMC 100Bi- 6+6 /DIN-DIN-S-2C	F101862	6+6	730	430	120
FTMC 100Bi- 2+8 /DIN-DIN-S-2C	F101863	2+8	675	430	120
FTMC 100Bi- 4+8 /DIN-DIN-S-2C	F101864	4+8	730	430	120
FTMC 100Bi- 6+8 /DIN-DIN-S-2C	F101865	6+8	785	430	120
FTMC 100Bi- 8+8 /DIN-DIN-S-2C	F101866	8+8	840	430	120
FTMC 100Bi- 2+10 /DIN-DIN-S-2C	F101867	2+10	730	430	120
FTMC 100Bi- 4+10 /DIN-DIN-S-2C	F101868	4+10	785	430	120
FTMC 100Bi- 6+10 /DIN-DIN-S-2C	F101869	6+10	840	430	120
FTMC 100Bi- 8+10 /DIN-DIN-S-2C	F101870	8+10	895	430	120
FTMC 100Bi- 10+10 /DIN-DIN-S-2C	F101871	10+10	950	430	120
FTMC 100Bi- 2+12 /DIN-DIN-S-2C	F101872	2+12	785	430	120
FTMC 100Bi- 4+12 /DIN-DIN-S-2C	F101873	4+12	840	430	120
FTMC 100Bi- 6+12 /DIN-DIN-S-2C	F101874	6+12	895	430	120

①Option Depth 105mm

②Option Width 400mm

F.T.M.C. Three Phase MCB Split Distribution Boards (Plug-in Type)



Catalogue Number and Selection Guide

Split busbar three phase distribution board "Bi" series

FTMC PQJP 312 / DIN - S

Brand | Series | TP ways | Type of branch | Mounting

FTMC Type Three Phase MCB Split Distribution Boards Surface

Catalogue number Surface Mounted	Ref.no.	Outgoing ways TP	Dimension (mm) Height A	Width B	Depth C
Incomer types: MCB/RCCB/Switch disconnector100-A maximum			Outgoing: Plug-in Type		
FTMCPQJP312+06DIN-S	F101875	4+2	761	430 ②	105 ①
FTMCPQ P312+12DIN-S	F101876	4+4	837	430	105
FTMCPQJP312+18DIN-S	F101877	4+6	913	430	105
FTMCPQJP318+24DIN-S	F101878	6+8	989	430	105
FTMCPQ JP318+06DIN-S	F101879	6+2	837	430	105
FTMCPQ JP318+12DIN-S	F101880	6+4	913	430	105
FTMCPQ JP318+18DIN-S	F101881	6+6	989	430	105
FTMCPQ JP330+12DIN-S	F101882	10+4	1065	430	105
FTMCPQ JP336+12DIN-S	F101883	12+4	1141	430	105

FTMC Type Three Phase MCB Split Distribution Boards Flush

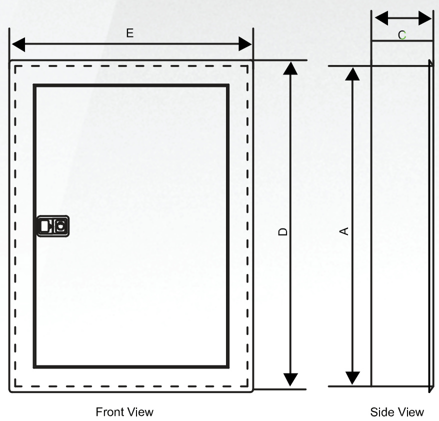
Catalogue number Flush Mounted	Ref. No.	Outgoing ways TP	Board dimension (mm) Height A	Width B	Depth C	Flush cover dimension(mm) Height D	Width E
Incomer types: MCB/RCCB/Switch disconnector100-A maximum				Outgoing: Plug-in Type			
FTMCPQJP312+06DIN-F	F101884	4+2	761	430②	105①	786	455
FTMCPQJP312+12DIN-F	F101885	4+4	837	430	105	862	455
FTMCPQ JP312+18DIN-F	F101886	4+6	913	430	105	938	455
FTMCPQ JP318+24DIN-F	F101887	4+8	989	430	105	1014	455
FTMCPQ JP318+06DIN-F	F101888	6+2	837	430	105	862	455
FTMCPQ JP318+12DIN-F	F101889	6+4	913	430	105	938	455
FTMCPQ JP318+18DIN-F	F101890	6+6	989	430	105	1014	455
FTMCPQ JP330+12DIN-F	F101891	10+4	1065	430	105	1090	455
FTMCPQ JP336+12DIN-F	F101892	12+4	1141	430	105	1166	455

①Option Depth 120mm

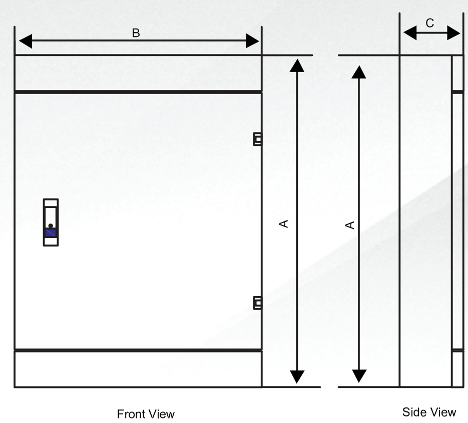
②Option Width 400mm

F.T.M.C . Three Phase MCB Dimensions Boards Accessories

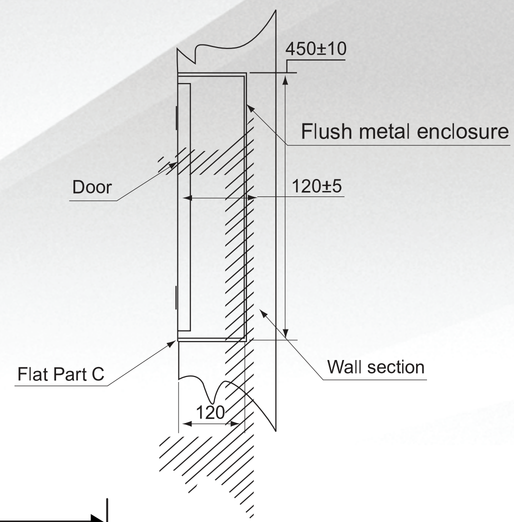
Flush Type

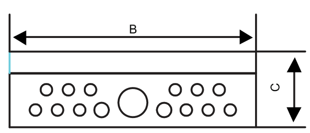


Surface Type

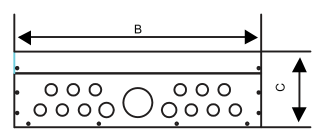


Front View





Top View



Bottom View

Dimensions(mm)

Maximum cable capacity

Incomer and feeders

● Neutral bar	$10mm^2$
● Earth bar	$10mm^2$
● MCB	$25mm^2$
● RCD	63Amp-$25mm^2$, 80&100Amp-$50mm^2$
● RCBO	$16mm^2$
● Switch disconnectors	125Amp-$35mm^2$
● Direct cable	Without incomer kit $35mm^2$
	With incomer kit $150mm^2$

"FTCG"&"FTCF" frame MCCB

● Without external box	100Amp-2.5 to $50mm^2$, 225Amp-25 to $70mm^2$
● Without external box	225Amp-$95mm^2$

"FTCJ" frame MCCB

● Without external box	25 to $70mm^2$
● Without external box	25 to $185mm^2$

F.T.M.C . Three Phase MCB Dimensions Boards Accessories

- To be used for additional cable space.
- To be used for the installation of additional control, metering or power components.
- 1.2mm sheet steel thickness.
- Epoxy powder paint finish RAL 7032.
- Easy to install.
- Removable front & bottom plate for direct access.

Extension Boxes for MCB/RCCB(Top&Bottom)

Part No.	Ref. No.	Height (mm)	Width (mm)	Depth (mm)
FTCEXB105/200	F101893	200	430	105
FTCEXB105/400	F101894	400	430	105
FTCEXB120/200	F101895	200	430	120
FTCEXB120/400	F101896	400	430	120

Extension Boxes for MCCB(Top&Bottom)

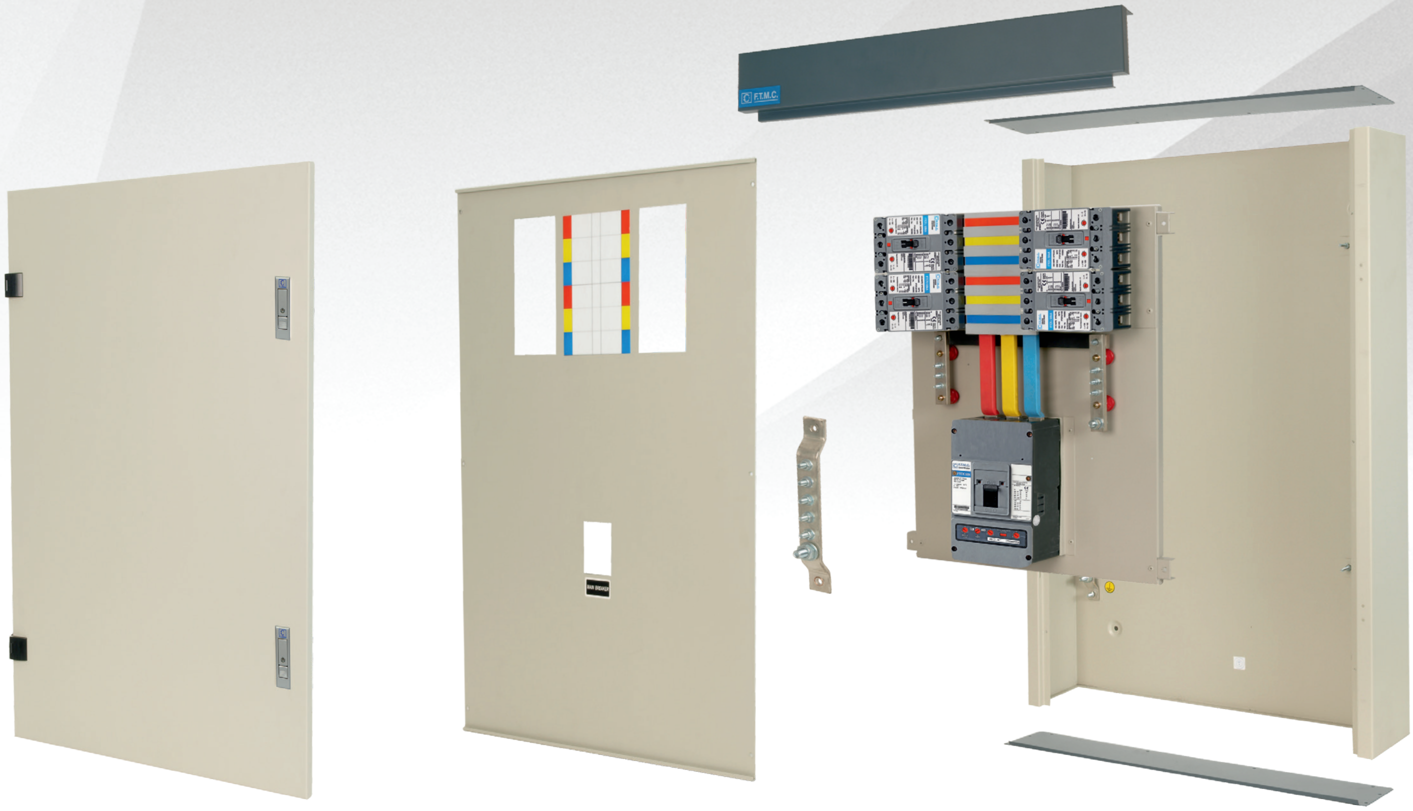
Part No.	Ref. No.	Height (mm)	Width (mm)	Depth (mm)
FTCEXB135/200	F101897	200	430	135
FTCEXB135/400	F101898	400	430	135

Blanking Plates Accessories

Blanking plates are used to cover any space ways

Part No.	Ref. No.	Description
FTCBPMCB	F101899	Blank plate for 1 pole MCB breakers
FTCBPFTCG	F101900	BlankPlateforMCCB(FTCG)Breakers
FTCBPFTCF	F101901	BlankPlateforMCCB(FTCF)Breakers

F.T.M.C. MCCB Panel Board Series (Ci,Gi,Fi)



Specification:

- 250A, 400A, & 630A Panel Board versions are available.
- 2 to 18 outgoing ways.
- Outgoing breaker's up to 250Amp MCCB.
- Ingress protection up to IP43 with standard IEC 60529.
- ASTA certificate fully Type-Tested to standard 61439-1,2 & 3.
- One piece tin-plated copper busbars with full Bracing.
- Flat removable gland plates make drilling and access easier.
- Metering options.
- Reliable & safe or Top & Bottom extension modules provide improved access for larger cables.
- Versatile solution, accommodating different size outgoing breakers to meet much application needs.
- Enhanced safety through fully shrouded incoming devices, to protect against contact with live parts.
- Blanking plates finger protect unused outgoing ways.

F.T.M.C. MCCB Panel Board Ci Series Three Phase 250 Amp

Combining robust high quality engineering with the latest international construction, testing and installations standard, F.T.M.C.Ci range of distribution boards has been design to meet the requirement of consultants, contractors, users and distributors.

Specification:

- The 250 Amp assembly complies with IEC 61439-1,2 & 3.
- Type-tested to the latest standard complete with the full type-tests.
- Main busbar is tested and rated at full load 250 Amp with No de-rating on the main busbar.
- Ingress protection up to IP43 standard to IEC 60529
- ASTA certified short circuit level of 35kA rms for 1 sec and 25kA for 3 sec.
- Flat removable gland plates make drilling and access easier.
- External and internal earthing points are provided.
- Simple busbar design with maximum reliability.
- Generous cabling area throughout the range.
- 1.5 mm sheet steel thickness.

F.T.M.C. MCCB Panel Board Gi Series Three Phase 400 Amp

Combining robust high quality engineering with the latest international construction, testing and installations standard, F.T.M.C. Gi range of distribution boards has been design to meet the requirement of consultants, contractors, users and distributors.

Specification:

- The 400 Amp assembly complies with IEC 61439-1,2 & 3.
- Type-tested to the latest standard complete with the full type-tests.
- Tested and rated at full load 400A with NO de-rating on the main busbar.
- Ingress protection up to IP43 standard to IEC 60529
- ASTA certified short circuit level of 35kA rms for 1 second and 25kA rms for 3 seconds.
- Flat removable gland plates make drilling and access easier.
- External and internal earthing points are provided.
- Simple busbar design with maximum reliability, available in outgoing ratings up to 225 Amps MCCBs.
- Generous cabling area throughout the range.
- 1.5 mm sheet steel thickness.

F.T.M.C. MCCB Panel Board Fi Series Three Phase 630 Amp

Combining robust high quality engineering with the latest international construction, testing and installations standard, F.T.M.C. Fi range of distribution boards has been design to meet the requirement of consultants, contractors, users and distributors.

Specification:

- The 630 Amp assembly complies with IEC 61439-1,2 & 3.
- Type-tested to the latest standard complete with the full type-tests.
- Tested and rated at full load 630A with NO de-rating on the main busbar.
- Ingress protection up to IP43 standard to IEC 529
- ASTA certified short circuit level of 50kA rms for 1 second and 35 kA rms for 3 seconds.
- Flat removable gland plates make drilling and access easier.
- External and internal earthing points are provided.
- Simple busbar design with maximum reliability, available in outgoing ratings up to 225 Amps MCCBs.
- Generous cabling area throughout the range.
- 1.5 mm sheet steel thickness.

F.T.M.C. MCCB Three Phase Panel Board

Catalogue Number and Selection Guide

Panelboards "Ci,Gi & Fi Series Outgoing max. 125Amps

FTMC 250 Ci 4 / F - G / SM / M

Brand | B/B rating | Series | Ways | Type of incomer | Type of branch | Surface mounting | Metering

Catalogue number Surface Mounted	Ref. No.	Outgoing ways TP	Dimension (mm)		
			Height A	Width B	Depth C
Maximum outging branch MCCB 125A					
FTMC250Ci2/F-G/SM	F101902	2	720	650	175
FTMC250Ci4/F-G/SM	F101903	4	800	650	175
FTMC250Ci6/F-G/SM	F101904	6	900	650	175
FTMC250Ci8/F-G/SM	F101905	8	980	650	175
FTMC250Ci10/F-G/SM	F101906	10	1060	650	175
FTMC250Ci12/F-G/SM	F101907	12	1140	650	175
FTMC250Ci2/CHA-G/SM	F101908	2	720	650	175
FTMC250Ci4/CHA-G/SM	F101909	4	800	650	175
FTMC250Ci6/CHA-G/SM	F101910	6	900	650	175
FTMC250Ci8/CHA-G/SM	F101911	8	980	650	175
FTMC250Ci10/CHA-G/SM	F101912	10	1060	650	175
FTMC250Ci12/CHA-G/SM	F101913	12	1140	650	175
FTMC250Ci4/J-G/SM	F101914	4	1080	650	175
FTMC250Ci6/J-G/SM	F101915	6	1130	650	175
FTMC250Ci8/J-G/SM	F101916	8	1200	650	175
FTMC250Ci10/J-G/SM	F101917	10	1270	650	175
FTMC250Ci12/J-G/SM	F101918	12	1350	650	175
FTMC250Ci14/J-G/SM	F101919	14	1420	650	175
FTMC250Ci16/J-G/SM	F101920	16	1510	650	175
FTMC400Gi4/K-G/SM	F101921	4	1080	650	175
FTMC400Gi6/K-G/SM	F101922	6	1130	650	175
FTMC400Gi8/K-G/SM	F101923	8	1200	650	175
FTMC400Gi10/K-G/SM	F101924	10	1270	650	175
FTMC400Gi12/K-G/SM	F101925	12	1350	650	175
FTMC400Gi14/K-G/SM	F101926	14	1420	650	175
FTMC400Gi16/K-G/SM	F101927	16	1510	650	175
FTMC400Gi18/K-G/SM	F101928	18	1600	650	175

F.T.M.C. MCCB Three Phase Panel Board

Catalogue Number and Selection Guide

Panelboards "Ci,Gi & Fi Series Outgoing max. 125Amps

FTMC 250 Fi 4 / L - G / SM / M

Brand | B/B rating | Series | Ways | Type of incomer | Type of branch | Surface mounting | Metering

Catalogue number Surface Mounted	Ref. No.	Outgoing ways TP	Dimension (mm)		
			Height A	Width B	Depth C
Maximum outging branch MCCB 125A					
FTMC630Fi4/L-G/SM	F101929	4	1230	650	200
FTMC630Fi6/L-G/SM	F101930	6	1335	650	200
FTMC630Fi8/L-G/SM	F101931	8	1440	650	200
FTMC630Fi10/L-G/SM	F101932	10	1545	650	200
FTMC630Fi12/L-G/SM	F101933	12	1650	650	200
FTMC630Fi14/L-G/SM	F101934	14	1755	650	200
FTMC630Fi16/L-G/SM	F101935	16	1860	650	200
FTMC630Fi18/L-G/SM	F101936	18	2000	650	200

F.T.M.C. MCCB Three Phase Panel Board

Catalogue Number and Selection Guide

Panelboards "Ci Gi & Fi" series outgoing max. 225 Amps

FTMC 250 Ci 4 / F - F / SM / M

Brand | B/B rating | Series | Ways | Type of incomer | Type of branch | Surface mounting | Metering

Catalogue number Surface Mounted	Ref. No.	Outgoing ways TP	Dimension (mm) Height A	Width B	Depth C
Maximum outging branch MCCB 225A					
FTMC250Ci4/F-F/SM	F101937	4	1015	750	175
FTMC250Ci6/F-F/SM	F101938	6	1110	750	175
FTMC250Ci8/F-F/SM	F101939	8	1215	750	175
FTMC250Ci10/F-F/SM	F101940	10	1320	750	175
FTMC250Ci12/F-F/SM	F101941	12	1425	750	175
FTMC250Ci4/CHA-F/SM	F101942	4	1015	750	175
FTMC250Ci6/CHA-F/SM	F101943	6	1110	750	175
FTMC250Ci8/CHA-F/SM	F101944	8	1215	750	175
FTMC250Ci10/CHA-F/SM	F101945	10	1320	750	175
FTMC250Ci12/CHA-F/SM	F101946	12	1425	750	175
FTMC250Ci4/J-F/SM	F101947	4	1115	750	175
FTMC250Ci6/J-F/SM	F101948	6	1210	750	175
FTMC250Ci8/J-F/SM	F101949	8	1315	750	175
FTMC250Ci10/J-F/SM	F101950	10	1420	750	175
FTMC250Ci12/J-F/SM	F101951	12	1525	750	175
FTMC400Gi4/K-F/SM	F101952	4	1115	750	185
FTMC400Gi6/K-F/SM	F101953	6	1210	750	185
FTMC400Gi8/K-F/SM	F101954	8	1315	750	185
FTMC400Gi10/K-F/SM	F101955	10	1420	750	185
FTMC400Gi12/K-F/SM	F101956	12	1525	750	185
FTMC400Gi14/K-F/SM	F101957	14	1630	750	185
FTMC400Gi16/K-F/SM	F101958	16	1735	750	185

F.T.M.C. MCCB Three Phase Panel Board

Catalogue Number and Selection Guide

Panelboards "Ci Gi & Fi" series outgoing max. 225 Amps

FTMC 630 Fi 4 / L - F / SM / M

Brand | B/B rating | Series | Ways | Type of incomer | Type of branch | Surface mounting | Metering

Catalogue number Surface Mounted	Ref. No.	Outgoing ways TP	Dimension (mm)		
			Height A	Width B	Depth C
Maximum outging branch MCCB 225A					
FTMC630Fi6/L-F/SM	F101959	6	1335	750	200
FTMC630Fi8/L-F/SM	F101960	8	1440	750	200
FTMC630Fi10/L-F/SM	F101961	10	1545	750	200
FTMC630Fi12/L-F/SM	F101962	12	1650	750	200
FTMC630Fi14/L-F/SM	F101963	14	1755	750	200
FTMC630Fi16/L-F/SM	F101964	16	1860	750	200
FTMC630Fi18/L-F/SM	F101965	18	2000	750	200

F.T.M.C. MCCB Panel Board Accessories

- To be used for standard current rating and voltage Measurements.
- 3phase indication.
- Standard metering comprise: 1 Ammeter, 1 voltmeter, 4 Position & 7 Position selector switch
- 3 Indication Lamps.
- Removable front plate for direct access.
- Up to 96 x 96mm.

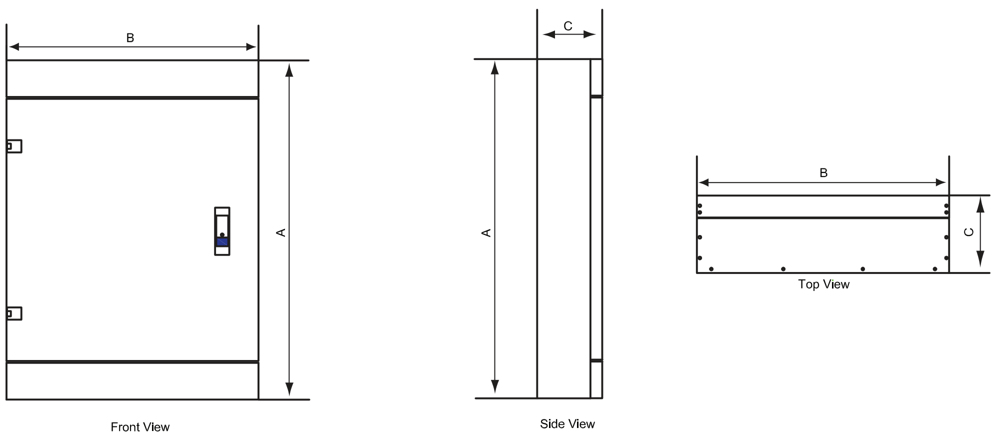
Blanking plates are used to cover any space ways
FTCG breaker blank plate

Part No.	Ref. No.	Description
BPFTCG	F101978	Blank plate for 1 pole FTCG MCCB breaker

Blanking plates are used to cover any space ways
FTCF breaker blank plate

Part No.	Ref. No.	Description
BPFTCF	F101979	Blank plate for 1 pole FTCF MCCB breaker

SMDB Type



Dimensions(mm)

Maximum cable / screw capacity

Neutral bar	M6
Earth bar	M6
Main netural terminal	M10
Main earth terminal	M10
“FTCK” frame MCCB	35-300mm^2
“FTCJ” frame MCCB	25-185mm^2
“FTCF” frame MCCB	16-150mm^2
“FTCG” frame MCCB	3-95mm^2

F.T.M.C. MCCB Panel Board Accessories

Extension Boxes for MCCB CHA ,F, J, K, L Incomer

- To be used for additional cable space.
- To be used for the installation of additional control, metering or power components.
- Epoxy polyester powder paint finish RAL 7032.
- 1.5mm sheet steel thickness.
- Easy to install.
- Removable front & bottom plate for direct access.
- Add"M" at the part number of standared metering is required.

Series Ci, Gi MCCB Panel Board Accessories

250Ci series panel board F, J, CAH incomer outgoing 125Amps.

Item	Model	Part No.	Height (mm)	Width (mm)	Depth (mm)
Metering kit	EXBCJG2	F101966	200	650	175
Extension box bottom & top	EXBCJG4	F101967	400	650	175
Extension box side	EXBCJG2.5	F101968	According to panel	250	175

400Gi series panel board K incomer outgoing 125Amps.

Item	Model	Part No.	Height (mm)	Width (mm)	Depth (mm)
Metering kit	EXBCKG2	F101969	200	650	175
Extension box bottom & top	EXBCKG4	F101970	400	650	175
Extension box side	EXBCKG2.5	F101971	According to panel	250	175

400Gi series panel board F, K incomer outgoing 225Amps.

Item	Model	Part No.	Height (mm)	Width (mm)	Depth (mm)
Metering kit	EXBCKJ2	F101972	200	750	185
Extension box bottom & top	EXBCKJ4	F101973	400	750	185
Extension box side	EXBCKJ2.5	F101974	According to panel	250	185

630Fi series panel board L incomer outgoing 225Amps.

Item	Model	Part No.	Height (mm)	Width (mm)	Depth (mm)
Metering kit	EXBF2	F101975	120	750	200
Extension box bottom & top	EXBF4	F101976	400	750	200
Extension box side	EXBF2.5	F101977	According to panel	250	200

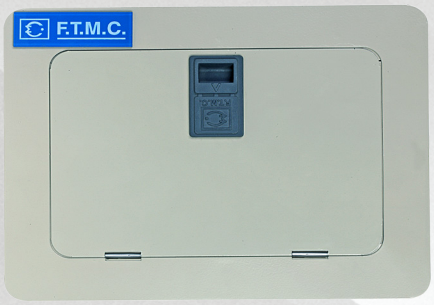
F.T.M.C. Option's and Accessories

Side cable extension boxes and top / bottom cable extension

Analogue and digital meter packs

Door locking option

F.T.M.C. Single Phase Distribution Board Plug-in Type



CATALOGUE NUMBER AND SELECTION GUIDE

Brand | Series | Type of Incomer | Phase | Ways | Type of Branch | Mounting

FTMC CO J- 04 J- F

Catalogue number Flush Mounted	Ref.No.	Outgoing ways SP	Board dimension (mm) Height A	Width B	Depth C	Flush Cover Dimension (mm) Height D	Width E
Incomer types: DIN	Outgoing: Plug-In Type						
FTMC COJ104-J-F	F101980	4	260	230	90	285	255
FTMC COJ106-J-F	F101981	6	310	230	90	335	255
FTMC COJ108-J-F	F101982	8	360	230	90	385	255
FTMC COJ110-J-F	F101983	10	410	230	90	435	255
FTMC COJ112-J-F	F101984	12	465	230	90	490	255
FTMC COJ114-J-F	F103357	14	515	230	90	540	255

Catalogue number Surface Mounted	Ref.No.	Outgoing ways SP	Board dimension (mm) Height A	Width B	Depth C
Incomer types: DIN	Outgoing: Plug-In Type				
FTMC COJ104-J-S	F101986	4	260	230	90
FTMC COJ106-J-S	F101987	6	310	230	90
FTMC COJ108-J-S	F101988	8	360	230	90
FTMC COJ110-J-S	F101989	10	410	230	90
FTMC COJ112-J-S	F101990	12	465	230	90
FTMC COJ114-J-S	F103358	14	515	230	90

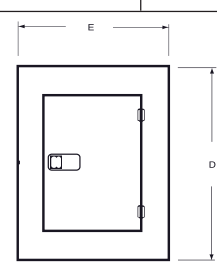
* Note: D and E Dimensions are used for Flush only.

Dimensions (mm)

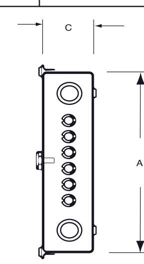
Maximum Cable Capacity
Incomers and feeders

Neutral bar	$10mm^2$
Earth bars	$10mm^2$
Main earth termination	$16mm^2$ - Terminal
MCB	$25mm^2$
RCD	63A-$25mm^2$, 80 & 100A - $50mm^2$
RCBO	$16mm^2$
Switch Disconnectors	$35mm^2$

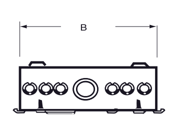
1- The incomer can be DIN, RCD or Plug-in



FRONT VIEW



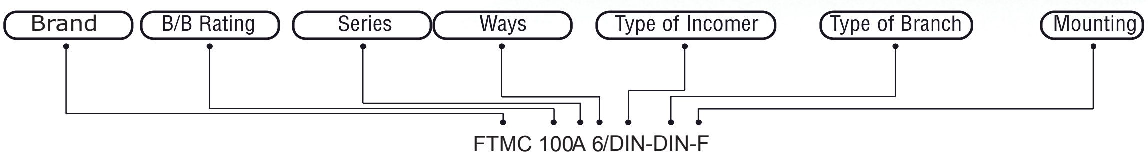
SIDE VIEW



TOP VIEW

F.T.M.C. Single Phase Distribution Board DIN Rail Type

CATALOGUE NUMBER AND SELECTION GUIDE



Catalogue number Flush Mounted	Ref.No.	Outgoing ways SP	Board dimension (mm)			Flush Cover Dimension (mm)	
			Height A	Width B	Depth C	Height D	Width E
Incomer types: DIN 100A	Outgoing: DIN Type						
FTMC100 A 4/DIN-DIN-F	F103359	4	230	233	90	255	300
FTMC100 A 6/DIN-DIN-F	F101991	6	265	233	90	290	300
FTMC100 A 8/DIN-DIN-F	F101992	8	300	233	90	325	300
FTMC100 A 10/DIN-DIN-F	F101993	10	335	233	90	360	300
FTMC100 A 12/DIN-DIN-F	F101994	12	375	233	90	400	300
FTMC100 A 14/DIN-DIN-F	F103360	14	410	233	90	435	300

Catalogue number Surface Mounted	Ref.No.	Outgoing ways SP	Board dimension (mm)		
			Height A	Width B	Depth C
Incomer types: DIN 100A	Outgoing: DIN Type				
FTMC100 A 4/DIN-DIN-S	F103361	4	230	270	90
FTMC100 A 6/DIN-DIN-S	F101996	6	265	270	90
FTMC100 A 8/DIN-DIN-S	F101997	8	300	270	90
FTMC100 A 10/DIN-DIN-S	F101998	10	335	270	90
FTMC100 A 12/DIN-DIN-S	F101999	12	375	270	90
FTMC100 A 14/DIN-DIN-S	F103362	14	410	270	90

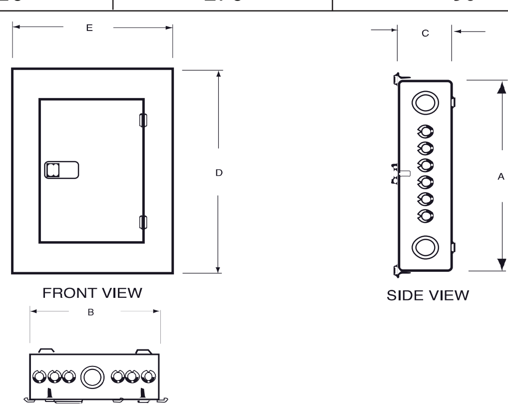
* Note: D and E Dimensions are used for Flush only.

Dimensions (mm)

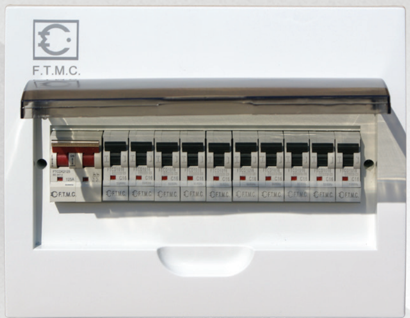
Maximum Cable Capacity
Incomers and feeders

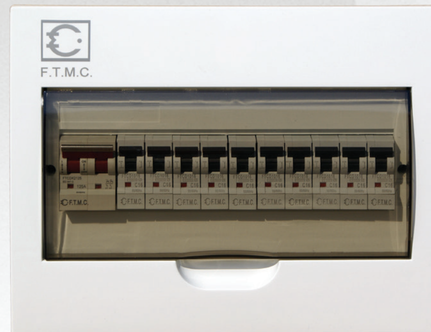
Neutral bar	$10mm^2$
Earth bars	$10mm^2$
Main earth termination	$16mm^2$ - Terminal
MCB	$25mm^2$
RCD	63A-$25mm^2$, 80 & 100A - $50mm^2$
RCBO	$16mm^2$
Switch Disconnectors	$35mm^2$

1- The incomer can be DIN or RCD



F.T.M.C. PLASTIC PANEL BOARD





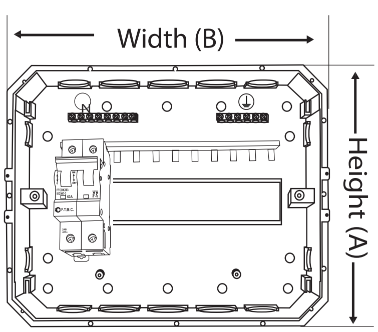
Product Description :

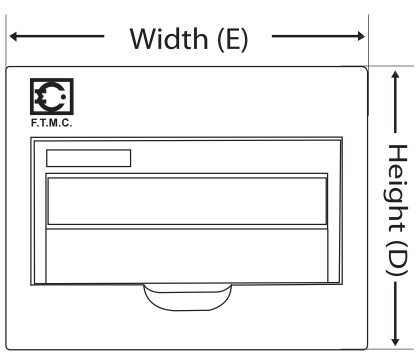
FTMC series Surface type plastic distribution boxes with main busbar are mainly used in the circuit of AC 60/50Hz, rated voltage 240V, and acted to install the main breaker and branch breaker. It is widely used in the house, stores. the plastic unit of the FTMC Series Surface type distribution boxes adopts ABS flame-proof material with the characteristics of flame-proof, impulse proof, excellent insulation property asn so on.

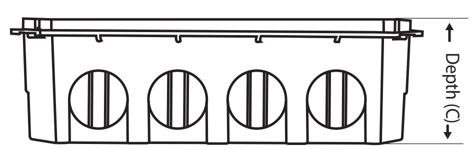
Structure and features:

This distribution boxes can be with main breaker 100A and branch breaker from 63-6A, Installation and dismounting are easy

Catalogue Number	*Number Of Way*	*Ref. No.*	*Board Dimension (mm)*			*Flush Cover Dimension (mm)*	
			Hight (A)	*Width(B)*	*Depth (C)*	*Hight (D)*	*Width(E)*
FTMCDPB4W	4	F102000	212	160	60	220	170
FTMCDPB6W	6	F102001	212	200	60	220	210
FTMCDPB8W	8	F102002	212	235	60	220	245
FTMCDPB10W	10	F102003	212	270	60	220	280
FTMCDPB12W	12	F102004	212	320	60	220	335







F.T.M.C. Row Type Distribution Board

Combining robust high quality engineering with the latest international construction, testing and installations standard, F.T.M.C.Row Type range of distribution boards has been design to meet the requirement of consultants, contractors, users and distributors.

Specification:

- Compact modular design.
- Easy to install and safe for end- user.
- High quality and corrosion resistant.
- To be used for DIN rail power control components.
- 1.2mm sheet thickness
- Epoxy polyster powder paint finish RAL 7032.
- Cover door is supplied by lock for more safety.
- Surface and flush mounted design.
- The degree of protection IP41 as per IEC 529 and NEMA.
- The row capacity is 16 modules or 24 modules as option.
- Suitable for housing and industrial and commercial application

F.T.M.C. Row Type Distribution Board

Catalogue Number and Selection Guide

Panelboards "RT" series

FTMC RT 4 16 S

- FTMC: Brand
- RT: Series
- 4: Number of row
- 16: No. of modules
- S: No. of mounting

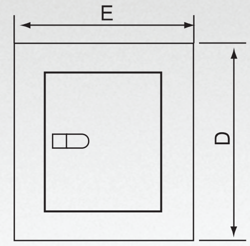
RT series surface mounted

Model	Ref. No.	Description		Dimension (mm)		
		Row	Modules	Height A	Width B	Depth C
FTMCRT116S	F102005	1	16	270	450	110
FTMCRT216S	F102006	2	16	420	450	110
FTMCRT316S	F102007	3	16	570	450	110
FTMCRT416S	F102008	4	16	720	450	110
FTMCRT516S	F102009	5	16	870	450	110
FTMCRT616S	F101432	6	16	1020	450	110
FTMCRT324S	F102010	3	24	570	594	110
FTMCRT424S	F102011	4	24	720	594	110
FTMCRT524S	F102012	5	24	870	594	110
FTMCRT624S	F101995	6	24	1020	594	110

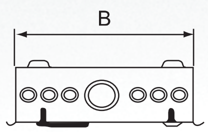
RT series flush mounted

Model	Ref. No.	Description		Dimension (mm)				
		Row	Modules	Height A	Width B	Depth C	Height D	Width E
FTMCRT116F	F102013	1	16	270	450	110	290	470
FTMCRT216F	F102014	2	16	420	450	110	440	470
FTMCRT316F	F102015	3	16	570	450	110	590	470
FTMCRT416F	F102016	4	16	720	450	110	740	470
FTMCRT516F	F102017	5	16	870	450	110	890	470
FTMCRT616F	F101985	6	16	1020	450	110	1040	470
FTMCRT324F	F102018	3	24	570	594	110	590	614
FTMCRT424F	F102019	4	24	720	594	110	740	614
FTMCRT524F	F102020	5	24	870	594	110	890	614
FTMCRT624F	F103356	6	24	1020	594	110	1040	614

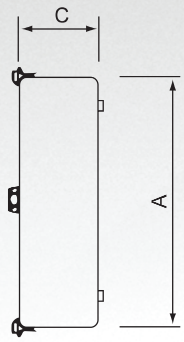
F.T.M.C. Row Type Distribution Board



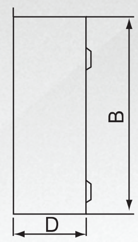
Front View

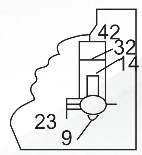


Top View

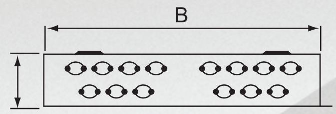


Side View

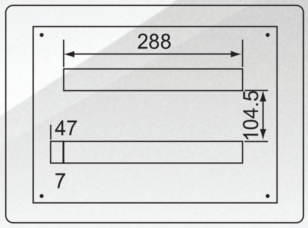




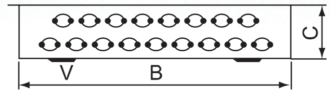
Fixing Hole Detail



Enclosure Top View



Frame Detail

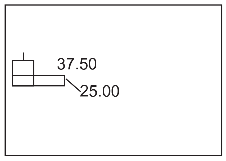


Encloser Bottom View

Key Door Lock

The F. T. M. C. distribution board is provided with the possibility of equipping its door with a security lock

Door Latch
Ref.No. F103403



Door

Steel Lock
Ref.No. F101483

Moulded Case Circuit Breakers with Enclosures

FTCF-Frame Breaker
380/415 Volts. 600Volts Ac Max.
16-225 Amps.

Ref. No.	Branch	Length (mm)	Width (mm)	Depth (mm)
F103125	FTCG	335	192	96
F103126	FTCF	338	195	96

FTCG-Frame Breaker
380/415 Volts. 600Volts Ac Max.
16-125 Amps.

F.T.M.C. 800-1250 Amp Three Phase Panel Board

- Assembly complies with IEC 61439-1,2
- ASTA Certified withstand short circuit 50KA for 1 sec & 35kA for 3 sec.
- Current rating tested up to 1250A.
- Ingress protection to IP54 is standard to IEC 60529
- Fully Insulated tin plated copper busbars, fully braced and supported
- High quality epoxy powder paint finish RAL 7032
- Dead front cover available behind the doors for additional protection
- Branch breakers up to 800A
- Floor free standing sheet steel enclosure with 2mm thickness
- Flat removable gland plates for easy drilling and cable access
- Generous cabling area with two standard sizes throughout the range

Catalogue Number and Selection Guide

Three phase MCB distribution board "Ki "Series

FTMC 1250 Ki 6 / FTCN - 2 FTCN + 6FTCG / M

Brand | B/B rating | Series | TP ways | Name of incomer | Type and quantity of branches | Metering

FTMC 1250A

Catalogue number	Ref.no.	Outgoing ways TP	Dimension (mm)		
			Height A	Width B	Depth C
FTMC1250Ki6-	F102021	6	2000	1200	600
FTMC1250Ki8-	F102022	8	2000	1200	600
FTMC1250 Ki10-	F102023	10	2000	1200	600
FTMC1250 Ki12-	F102024	12	2000	1200	600
FTMC1250 Ki14-	F102025	14	2000	1200	600
FTMC1250 Ki16-	F102026	16	2000	1200	600
FTMC1250 Ki18-	F102027	18	2200	1200	600

FTMC 800A

Catalogue number	Ref.no.	Outgoing ways TP	Dimension (mm)		
			Height A	Width B	Depth C
FTMC800Ki6-	F102030	6	2000	1200	600
FTMC800Ki8-	F102031	8	2000	1200	600
FTMC800 Ki10-	F102032	10	2000	1200	600
FTMC800 Ki12-	F102033	12	2000	1200	600
FTMC800 Ki14-	F102034	14	2000	1200	600
FTMC800 Ki16-	F102035	16	2000	1200	600
FTMC800 Ki18-	F102036	18	2200	1200	600

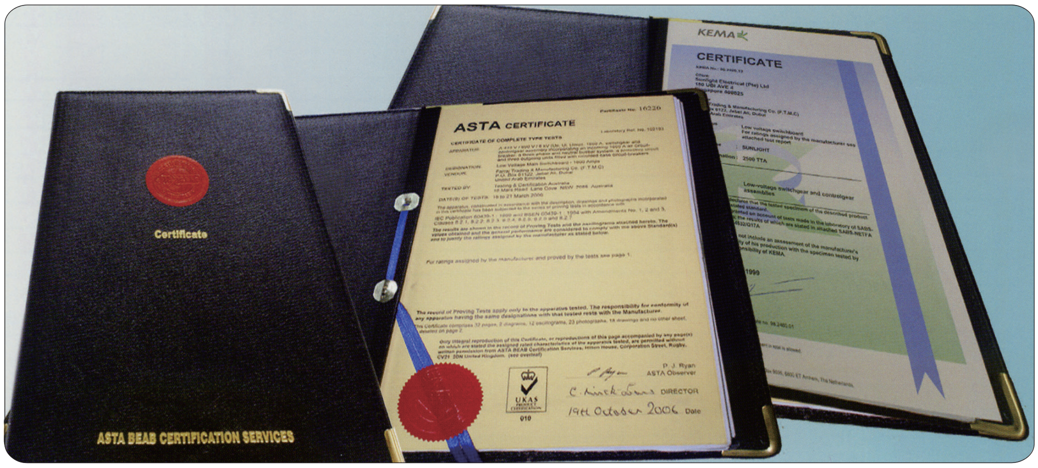
Main MCCB Incomer

FRAME NUMBER	NUMBER OF POLES	Ref.no.	AMPERE RANGE	BREAKING CAPACITY	Dimension (mm)		
					Height A	Width B	Depth C
FTCN	3	F102028	800 - 1250A	50 kA	406	210	140
FTCLG	3	F102029	630 - 800A	50 kA	406	210	140

F.T.M.C. Switchgear & Controlgear System

FTMC provides an extensive low voltage electrical equipment package to cover most applications. Due to the adaptability of FTMC is modular systems, many of the equipment or systems can easily be supplied and integrated in the same enclosure .
FTMC offers the complete range form packaged sub-stations main boards with nominal ratings from 800A to 6400 A. Incoming feeder sections and bus-coupler arrangements are available for rated current up to 6400A. Full flexibility of choice is offered in the selection of electrical equipment with regard to brand, make and type of breakers for fixed, withdrawal, etc.
Rating Table- Type- TESTED Range of Assemblies(TTA)*

Rating Table- Type-Tested Range of Assemblies (TTA)*



All FTMC L.V. Switchgear has been fully type- tested accourding to specifications and requirements of latest IEC 61439-1 & 2.it conforms to major markets specification in the world.

F.T.M.C. Switchgear & Controlgear System

The following tests have been successfully carried out at independent test laboratories by ASTA & KEMA.
Further specific tests are also performed and verified by local testing body like PSB (Productivity and Standards Board of Singapore) for some local installations:

- Verification of temperature-rise limits
- Verification of dielectric properties
- Verification of short-circuit withstand strenght
- Verification of the effectiveness of protective circuit
- Verification of the clearances and creepage distances
- Verification of mechanical operation
- Verification of degree of protection
- Verification of electromagnetic compatibility
- Verification of the resistance of insulating material to abnormal heat and fire

The busbar system and its operating temperature is designed and tested for below 80 degree temp rise i.e. 80K for both vertical and horizontal placements of breakers in both direct and reverse feeding, and ingress protection up to IP43, for FDB,SMDB, IP54 for MDB.
complete Switchgear is certified for electromagnetic compatibility by ASTA & KEMA.
certification services.

Rating Table-Tested Range of Assemblies (TTA)*

Rated current	Short time withstand (Icw)	Configuration
800 Amp	50/1 secs	Single support
1250 Amp	50/1 secs	Single support
1600 Amp	50 / 3 secs and 80/1 secs	Single support
2000 Amp	65/1 secs	Single support
2500 Amp	65/3 secs	Single support
3200 Amp	80/1 secs	Single support
4000 Amp	80/1 secs	Single support
5000 Amp	100 /1 secs	Single support
6400 Amp	100 /1 secs	Single support

*Updated at the time of publication. Please contact us for an updated list.

Busbar

Tinned copper with 100% full-sized neutral (no matt-black copper is used within board)

Finishing

Powder coated texture finishing to RAL 7032 (light beige). A wide choice of colours is also available upon request.

Forms of Separation

Form 2, 3 & 4 constructions up to Form 4 - Type 7-

Entry

Top and bottom cable and busduct entry with removable cable entry gland plates or insulated boards.

Notes

Notes

Notes

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Ref. FTC.14.02M.16