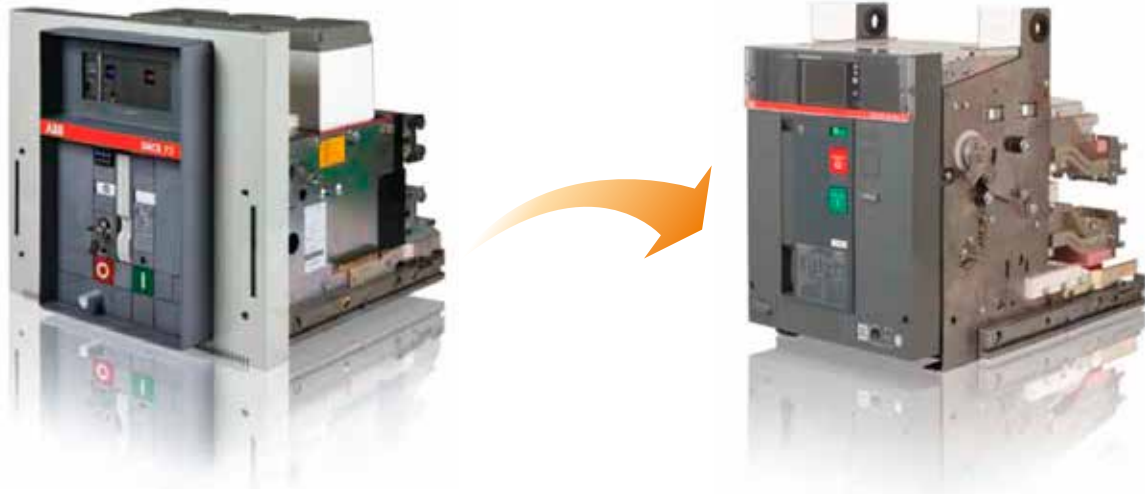


Retrofitting kit Megamax → Emax 2 Direct Replacement



With few modifications to be made to your existing switchgear, retrofitting kits are a cost effective solution to upgrade your electrical system. The direct replacement retrofitting kit allows a very fast and reliable upgrade of the old Megamax circuit breakers with Closed Door Mechanism.

In the field of low voltage circuit-breakers, ABB ensures operating continuity between the previous series of its apparatus and those currently in production. We achieve this by studying special solutions to replace old breakers with new ones, with minimal disruptions to the existing system.

It is now possible to replace the old series of Megamax circuit breakers, F1 and F2, in Closed Door withdrawable version with the latest series of circuit breaker Emax 2 by using the newly designed direct replacement retrofitting kit.

A special moving part has been created starting from the new circuit breaker in fixed version with horizontal rear terminals and a dedicated conversion kit.

The result is a Emax 2 E2.2 moving part able to be inserted into the existing Megamax fixed part.

With this solution, there is no need to manage any dismantling operation of the existing fixed parts of the Megamax breakers or rewiring of auxiliary circuit to replace existing functionalities: thanks to this special solution downtime is reduced and limited to the single load.

Even the racking in and out mechanism on the existing circuit breaker is reproduced on the Emax 2 retrofitting solution so as to keep the original system. Emax 2 racking in and out device is provided with push button to unlock the mechanism in the 3 positions: Connected – Test – Draw out.

Benefits

- Increase safety
- Service continuity guaranteed
- Ease of installation
- Reduce the cost of maintenance and spare parts
- Long availability of the product and its spare parts
- Conversion wiring already included
- Factory tested solution
- Wide range of mechanical and electrical accessories with Emax.

From Circuit-Breaker to Power Manager

SACE Emax 2 improves the efficiency of electrical plants, creating the new standard of:

- Control: Ekip PowerController to improve energy efficiency and saving
- Connectivity: integration into systems with integrated communication modules with different protocols: Modbus RS-485, Modbus TCP, Profibus, DeviceNet, EtherNet/IP, IEC61850, Bluetooth
- Ease of use: creation of efficiency and simplicity. Power measurement with Emax 2 advanced trip units
- Easy to Maintain; Diagnosis and installation with Ekip Connect Software. Programmed signal to remind to perform maintenance activities when required. LEAP (Life Expectancy Analysis Program) is also available with Emax 2 for Predictive Maintenance & Audits.

The kit consists of:

- Special Emax 2 moving part
- Standard Megamax/Novomax sliding contacts (left and right) and dedicated precabled wiring
- Standard Emax 2 Draw out lever
- Door flange
- Mechanical signalling of circuit breaker tripped
- Anti-insertion locks.

Megamax → Emax 2 Direct Replacement

Correspondences between **Megamax Closed Door** and Emax 2 Direct Replacement:

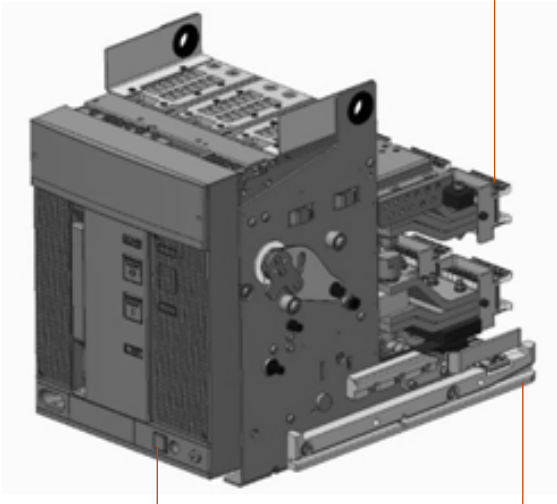
Original CB: Megamax W-CD	F1												F2		
Performance Levels	B			N			S			H			S	H	
Iu @40°C	1250	1600	2000	1250	1600	2000	1250	1600	2000	1250	1600	2000	2500	2000	2500
Poles	3/4p	3/4p	3/4p	3/4p	3/4p	3/4p	3/4p	3/4p	3/4p	3/4p	3/4p	3/4p	3/4p	3/4p	3/4p

Emax 2 Direct Replacement Solution	DR F1-E2.2												DR F2-E2.2		
Performance Levels	B			N			N			H			N	H	
Iu @40°C	1600	1600	2000	1250	1600	2000	1250	1600	2000	1250	1600	2000	2500 ⁽¹⁾	2000	2500 ⁽¹⁾
In (Rating Plug)	1250	1600	2000	1250	1600	2000	1250	1600	2000	1250	1600	2000	2500	2000	2500
Icu 400-415V	40	40	40	50	50	50	55	55	55	85	85	85	65	85	85
Icu 440-500V	40	40	40	40	40	40	50	50	50	70	70	70	60	70	70
Icu 690V	35	35	35	35	35	35	45	45	45	55	55	55	55	55	55

(1) = Derating up to 2400A with Fixed Part with HR terminals; No derating with Fixed part with VR terminals

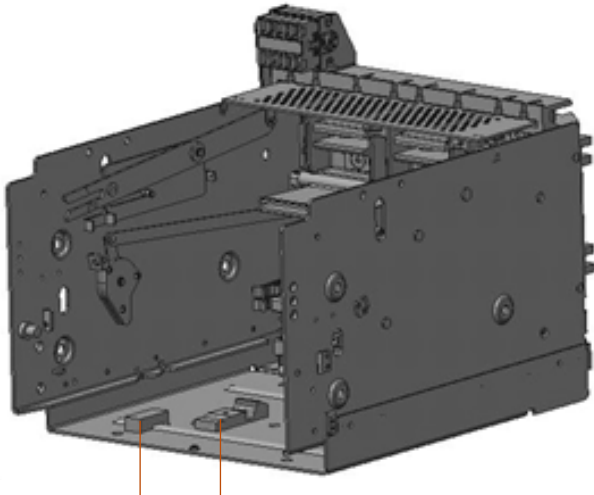
New Direct Replacement Solution with Emax 2

Jaw type contacts to connect
with Megamax fixed part



Emax 2 Closed Door mechanism

Pre-wired sliding contacts



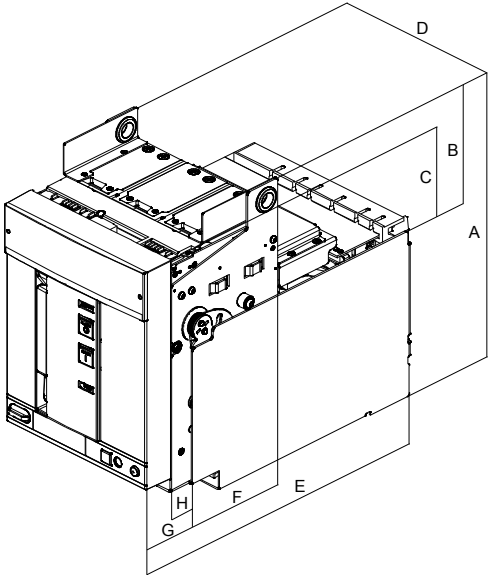
Megamax standard Fixed Part + matching connecting
device for the Emax 2 racking in-out mechanism

Before ordering, always verify that:

- The following minimum panel dimension are respected to allow the racking in of the Emax 2 Direct Replacement:

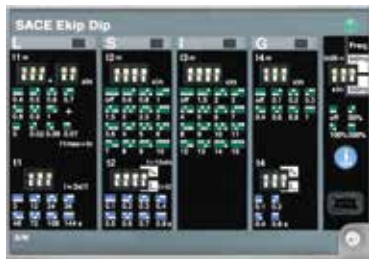
CB - poles	A	B	C	D	E	F	G	H
F1 - 3p	480	215	180	327	515	230	80	25
F1 - 4p	480	215	180	422	515	230	80	25
F2 - 3p	480	215	180	411	515	230	80	25
F2 - 4p	480	215	180	506	515	230	80	25

- Megamax Fixed Part is in good conditions as prescribed in the document 1SDH001279R0002



Megamax Closed door → Emax 2 Direct Replacement

Available trip units:



Ekip Dip



Ekip Touch



Ekip Hi-Touch with Ekip Measuring Pro

Electrical and Mechanical accessories mounted in Megamax that can be replaced with the corresponding one of Emax 2

SACE Megamax		SACE Emax 2
YO (shunt opening release)	→	Emax 2 standard YO
YC (shunt closing release)	→	Emax 2 standard YC
YU (undervoltage release)	→	Emax 2 standard YU
D (electronical Delay for YU - into the switchboard)	→	Remove the Megamax version and add the one of Emax 2
M (motor for charging spings)	→	Emax 2 standard Spring charge motor
AUX Spring charged (S33M)	→	Emax 2 standard
AUX CB tripped - S51	→	Emax 2 standard changeover contacts
AUX CB connected/ insulated position - S75S-S75I	→	Already included in the sliding contacts (standard supply)
AUX YU (YU energized)	→	Emax 2 standard
PR1/A (Ammeter module)	→	Only with Ekip Touch or Ekip Hi-Touch
PR1/C (Control module)	→	No more available
PR1/D (Insum dialog module)	→	No more available
Q1...Q25 (Open/Close AUX contacts)	→	Use same of Megamax on Fixed Part
SD devices	→	No more available
TV 051 (voltage transformer)	→	No more available. Use internal Ekip Measuring module
Megamax Shutter padlock device	→	Use the one of Megamax
Current sensor for neutral conductor outside circuit-breaker (into the switchboard)	→	Remove the Megamax version and add the one of Emax 2 standard
Key lock in open position	→	Emax 2 standard
Padlock in open position	→	Emax 2 standard
Mechanical operation counter	→	Emax 2 standard
IP54 door protection	→	Emax 2 standard
Transparent protective cover for O/C pushbuttons	→	Emax 2 standard
SOR Test Unit	→	Emax 2 standard

The following Emax 2 accessories are not compatible with Emax 2 Direct Replacement kit:

- Internal and external O/C AUX
- Remote reset command for tripped indication
- ATS
- Homopolar toroid
- Lock in/test/out position
- Mechanical lock for compartment door
- Mechanical interlock
- All accessories for Emax 2 fixed part

While the following accessories can be installed but need to be externally cabled:

- Electric remote Trip Unit reset
- Ekip Supply, Communication and Signaling modules
- Ekip Multimeter
- Ekip Control Panel

Contact us

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