Service note

Kit di Retrofit
Direct Replacement New Emax moving portion in Old Emax Fixed Part

With no 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 Emax to New Emax Range.

In the field of low voltage circuit-breakers, ABB ensures operating continuity between the previous series of its apparatus and those currently in production, 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 Emax circuit-breakers, from E1 to E6, in withdrawable version with the recent series of circuit New Emax by using the newly designed direct replacement retrofitting kit.
A dedicated moving part has been created starting from the new circuit breaker in order to replicate the main and auxiliary circuit of the Old Emax.
The result is a new New Emax moving part able to be inserted into the existing old Emax fixed part, maintaining the original connections in the switchgear.
With this solution, there is no need to manage any dismantling operation of the existing fixed parts of the Emax breakers: thanks to this special solution the downtime is reduced and limited to the single load.

Old Emax Series

New Emax Series

Benefits

- Service continuity guaranteed
- Easy to install
- Reduce the cost of maintenance and spare parts
- Long availability of the product and its spare parts
- Conversion wiring already included
- Guarantee tested solution
- The New Emax can be equipped with a wide range of accessories
- Accessories prewired according to the original trip unit (PR111 → PR121, PR112 → PR122 and PR113 → PR123)
- Advanced monitoring system
- Advanced communication with PR120 D-M, monitoring and power measurement capabilities available on new circuit breaker (with PR122 and PR123).

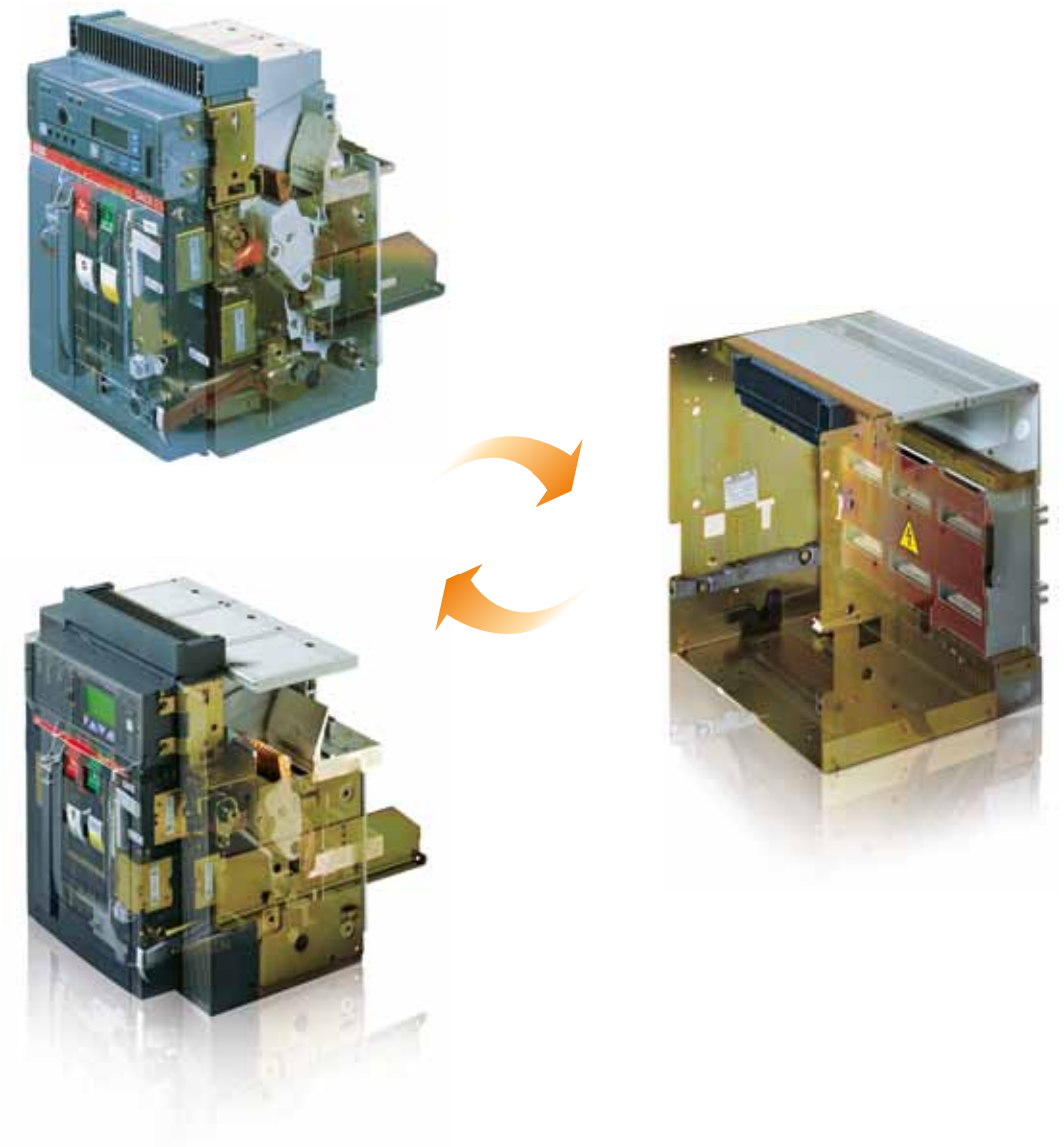
The kit consists in:

- Special New Emax moving part
- Dedicated wiring replicating the PR11x solutions
- Draw out lever
- Door flange
- Mechanical signaling of circuit breaker tripped
- Dedicaded anti-insertion lock as for old Emax Fixed Part
- Lifting plates and withdrawable lever.

Kit di Retrofit
Old Emax → New Emax Direct Replacement

Correspondences between Old Emax and New Emax Direct Replacement:

Old Emax	Performance Lev.	Version	Poles	Iu					To	New Emax	Performance Lev.
E1	B	W MP	3/4p	800	1250	-	-	-	→	E1	B
E1	N	W MP	3/4p	800	1250	-	-	-	→	E1	N
E2	B	W MP	3/4p	1600	2000	-	-	-	→	E2	B
E2	N	W MP	3/4p	1250	1600	2000	-	-	→	E2	N
E2	L	W MP	3/4p	1250	1600	-	-	-	→	E2	L
E3	N	W MP	3/4p	2500	3200	-	-	-	→	E3	N
E3	S	W MP	3/4p	1250	1600	2000	2500	3200	→	E3	S
E3	H	W MP	3/4p	1250	1600	2000	2500	3200	→	E3	H
E3	L	W MP	3/4p	2000	2500	-	-	-	→	E3	L
E4	S	W MP	3/4p	4000	-	-	-	-	→	E4	S
E4	H	W MP	3/4p	3200	4000	-	-	-	→	E4	H
E6	H	W MP	3/4p	5000	6300	-	-	-	→	E6	H
E6	V	W MP	3/4p	4000	5000	6300	-	-	→	E6	V



Trip Unit installed in old Emax that can be replaced with the corresponding one of New Emax (check additional units to be required):

PR111/P-LI
PR111/P-LSI
PR111/P-LSIG

PR121-LI
PR121-LSI
PR121-LSIG

PR112/P-LSI
PR112/P-LSIG

PR112/PDM-LSI
PR112/PDM-LSIG

PR112/PDL-LSI
PR112/PDL-LSIG

PR122-LSI with PR120/K
PR122-LSIG with PR120/K

PR122-LSI with PR120/K & PR120/D (*)
PR122-LSIG with PR120/K & PR120/D (*)

No Replacement
No Replacement

PR113/P-LSIG
PR113/PDM-LSIG

PR123-LSIG with PR120/K
PR123-LSIG with PR120/K & PR120/D (*)

(*) New Emax Dialogue unit has different Modbus Protocol interface; replacement require modification of scada systems to use new parameters (not included)

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

- YO (shunt opening release)
- YO2 (second shunt opening release)
- YC (shunt closing release)
- YU (undervoltage release)
- D (electronic Delay for YU - into the switchboard)
- M (motor for charging spring)
- AUX Spring charged (S33M)
- AUX CB tripped - S51
- AUX YU (YU energized) (not with PR113-123)
- Q1…Q4 (Open/Close AUX contacts)
- Q1…Q10 (Open/Close AUX contacts - for PR111-121)
- Internal Programmable contact with PR120/K (not with PR111-121)
- SOR Test Unit
- Key lock in open position
- Padlock in open position
- Mechanical operation counter
- Lock in/test/out position
- Mechanical lock for compartment door
- IP54 door protection
- Transparent protective cover for O/C pushbuttons
- Mechanical interlock with other breakers.

While the following accessories can be installed but externally cabled and installed:

- SOR Test Unit
- Current sensor for neutral conductor outside circuit-breaker (into the switchboard)
- TV (external voltage transformer)
- PR120/D-M (*)
- HMI030
- EP010
- New Emax Lift Device
- RRD

(*) New Emax Dialogue unit has different Modbus Protocol interface; replacement require modification of scada systems to use new parameters (not included)

The following New Emax accessories are not compatible with New Emax Direct replacement kit:

- Remote reset command for tripped indication
- Homopolar toroid for differential protection

Before ordering new Replacement Kit ABB suggest the verification of fixed part status and assess the absence of damage and the correct operation : F.P should present no traces of repulsion, short-circuiting or corroded copper, traces of oxidation or flaking silver-plating, plastic support that houses the studs is not cracked, broken or misshapen and sliding contacts is in a good condition and free to move. ABB Specialist are available to support or handle in these assessments

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