

Emax power circuit breakers.
The evolution
continues.
200 kA Fuseless



ABB



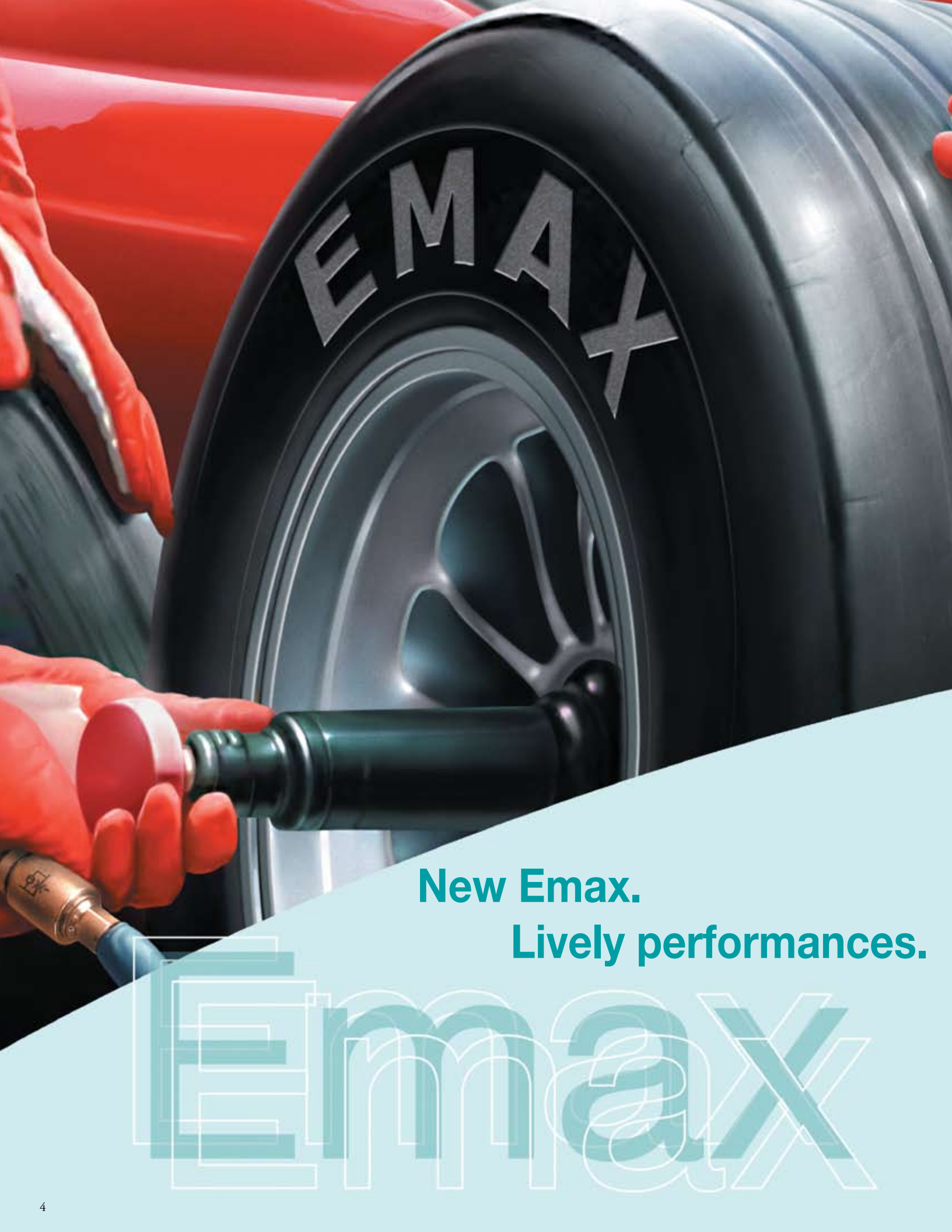
New Emax.
The evolution continues.

Emax



The new Emax power circuit breakers are the result of the constant commitment of ABB to look for new solutions utilizing the expertise in design they have developed over the years. This evolution has been taking place since 1942. The new Emax series is an incredibly innovative high quality circuit breaker range, designed to satisfy all application requirements. The range has

completely re-engineered trip units fitted with the latest generation electronics, improved performances within the same dimensions and new applications to fulfill the latest market needs. The new electronics open up a window on a world of extraordinary solutions, with connectivity options never seen before in the market. Discover the great advantages of ABB's new Emax.



**New Emax.
Lively performances.**

Emax



Continuing the tradition of ABB, the new Emax range offers performances at the top of their category. The Emax series offers you a great advantage: With the increased performances, you can now utilize the smaller circuit breaker frames, obtaining considerable savings both in economic terms and in space within switchboards, switchgear and control panels. The Emax E3X-A and E6X-A now reaches top performance in terms of rated short circuit current (with 200kA at 480V), while the Emax E2 is enhanced by the S and H versions... with high performances in very compact

dimensions. Always aware of the rapid changes in the market, ABB has made some specific versions to cover new applications and to simplify retrofit and retrofit operations.





Now there is remote setting

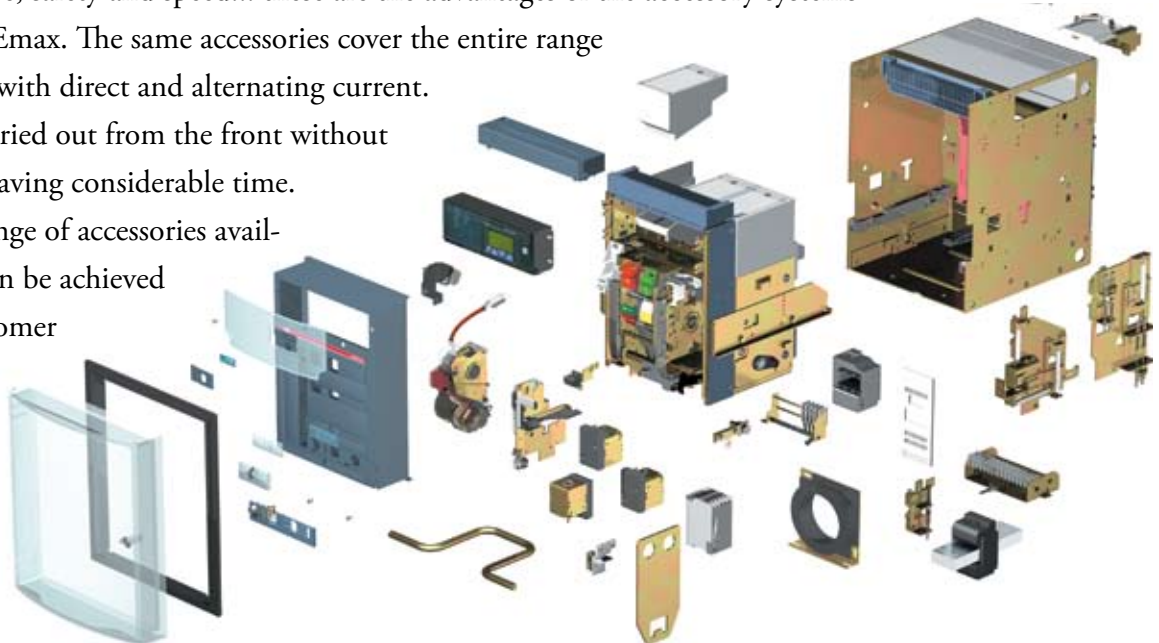
You can gain great benefits from the high level of connectivity possibilities: The new Emax can be connected to handheld (PDA) and laptop computers utilizing Bluetooth technology. The freedom of working with the latest technology offers many useful options: Remote programming, supervision and maintenance information gathering can be carried out thanks to a new remote setting supervisory display. by means of new communication and configuration units, transmitting information to the outside world becomes child's play. It is even possible to control and monitor devices outside the circuit breaker with the new external input/output modules.

Extremely simple installation

Installation of the Emax power circuit breaker is simple thanks to the reduced number of mounting points positioned on the base of the unit. The availability of a wide range of terminals and conversion kits means wall-mounted or rear-accessed switchgear can be built with ease.

Standardized accessories over the whole range

Simplicity, convenience, safety and speed... these are the advantages of the accessory systems designed for the new Emax. The same accessories cover the entire range and can be used both with direct and alternating current. Assembly is always carried out from the front without the need for cabling, saving considerable time. Thanks to the wide range of accessories available, customization can be achieved effectively for all customer requirements.



The space advantage.

Enclosure spacing requirements E3X/E6X 200 kA @ 480VAC

	Height (In)	Width (In)	Depth (In)
E3X-A			
Fixed			
3P	33.5	19.7	9.5
4P	33.5	24.8	9.5
Drawout			
3P	33.5	19.7	14.9
4P	33.5	24.8	14.9
E6X-A			
Fixed			
3P			
4P 50% Neutral	33.5	44.5	9.5
4P 100% Neutral	33.5	49.6	9.5
Drawout			
3P	33.5	39.4	14.9
4P 50% Neutral	33.5	44.5	14.9
4P 100% Neutral	33.5	49.6	14.9

Please contact your local ABB field sales office for other spacing requirements and breaker dimensions.

Emax UL circuit breakers

Common data

Voltages		
Rated maximum voltage	[V]	635
Rated voltage	[V]	600
Test voltage (1 min. 50/60 Hz)	[kV]	2.2
Frequency		
	[Hz]	50 - 60
Number of poles		
		3 - 4
Version		
		Fixed (F) - Draw out (W)



	E1		E2				
	B-A	N-A	B-A	N-A	S-A	H-A	
Level of performance							
Currents							
Frame size	[A]	800	800	1600	800	800	800
	[A]	1200	1200		1200	1200	1200
	[A]				1600	1600	1600
	[A]						
	[A]						
Capacity of neutral pole for four-pole circuit breakers	[%lu]	100	100	100	100	100	100
Rated short circuit current							
240 V	[kA]	42	50	42	65	65	85
480 V	[kA]	42	50	42	50	65	85
600 V	[kA]	42	50	42	50	65	65
Rated short time current	[kA]	42	50	42	50	65	65
Trip units							
PR121/P		■	■	■	■	■	■
PR122/P		■	■	■	■	■	■
PR123/P		■	■	■	■	■	■
Trip times							
Make time (max)	[ms]	80	80	80	80	80	80
Break time (<ST current) (max)	[ms]	70	70	70	70	70	70
Break time (>ST current) (max)	[ms]	30	30	30	30	30	12
Overall dimensions							
Fixed: H = 418 mm/16.46 in - D = 302 mm/11.89 in *							
W (3 poles/4 poles)	[mm]	296/386		296/386			
W (3 poles/4 poles)	[in]	11.65/15.2		11.65/15.2			
Draw out: H = 461 mm/18.15 in - D = 396.5 mm/15.61 in **							
W (3 poles/4 poles)	[mm]	324/414		324/414			
W (3 poles/4 poles)	[in]	12.76/16.3		12.76/16.3			
Weights (Circuit breaker complete with trip unit, RH terminals, CS, excluding accessories)							
Fixed							
3 poles/4 poles	[kg]	45/54		50/61			
3 poles/4 poles	[lbs]	99/119		110/134			
Draw out							
3 poles/4 poles	[kg]	70/82		78/93			
3 poles/4 poles	[lbs]	154/181		172/205			

(1) four poles only.

* for E3X-A: H=438 mm/ 17.24 in - D=302 mm/ 11.89 in

** for E3X-A: H=481 mm/ 18.94 in - D=396.5 mm/ 15.61 in

	E1 B-A/N-A		E2 B-A/N-A/S-A/H-A			
Continuous current rating lu	[A]	800	1200	800	1200	1600
Mechanical life with regular ordinary maintenance	[No. Operations x 1000]	20	20	20	20	20
Operation frequency	[Operations/hour]	30	30	30	30	30
Electrical life	[No. Operations x 1000]	10	10	10	10	10
Operation frequency	[Operations/hour]	30	30	30	30	30

(2) 10 for E3X-A.

(3) 1.5 for E3X-A.



15DC20001F0001



15DC20001F0001



15DC20001F0001

E3						E4					E6					
N-A	S-A	H-A	V-A	X-A		S-A	H-A	V-A	L-A	H-A/f ⁽¹⁾	H-A	V-A	L-A	X-A	H-A/f ⁽¹⁾	X-A/f ⁽¹⁾
2000	800	800	800	800		3200	3200	3200	3200	3200	4000	4000	4000	4000	4000	4000
2500	1200	1200	1200	1200		3600	3600	3600	3600	3600	5000	5000	5000	5000	5000	5000
	1600	1600	1600	1600												
	2000	2000	2000	2000												
	2500	2500	2500	2500												
	3200	3200	3200	3200												
100	100	100	100	100		50	50	50	50	100	50	50	50	50	100	100
65	85	85	125	200		85	100	100	125	100	125	125	150	200	125	200
50	65	85	125	200		65	85	100	125	85	85	125	150	200	85	200
50	65	85	100	14		65	85	100	100	85	85	100	100	100	85	100
50	65	65	85	14		65	85	100	100	85	100	100	100	100	100	100
■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■
■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■
■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■
80	80	80	80	80		80	80	80	80	80	80	80	80	80	80	80
70	70	70	70	70		70	70	70	70	70	70	70	70	70	70	70
30	30	30	30	30		30	30	30	30	30	30	30	30	30	30	30
		404/530						566/656		746			782/908		1034	
		15.91/20.82						22.28/25.83		29.37			30.79/35.78		40.71	
		432/558						594/684		774			810/936		1062	
		17.01/21.97						23.39/26.93		30.47			31.89/36.85		41.81	
		66/80		70/84				97/117		125			140/160		185	
		145/176		154/185				214/258		276			308/353		408	
		104/125		106/128				147/165		200			210/240		275	
		229/275		233/282				324/363		441			463/529		607	

E3 N-A/S-A/H-A/V-A						E4 S-A/H-A/V-A/L-A/H-A/f				E6 H-A/V-A/L-A/X-A/H-A/f/X-A/f	
800	1200	1600	2000	2500	3200	3200	3600			4000	5000
15 ⁽²⁾	15 ⁽²⁾	15 ⁽²⁾	15 ⁽²⁾	15	15	8	8			8	8
30	30	30	30	30	30	30	30			30	30
10 ⁽³⁾	10 ⁽³⁾	10 ⁽³⁾	8 ⁽³⁾	8	8	5	5			5	3
30	30	30	30	30	30	30	30			30	30



Modularity

The latest generation electronics from ABB have made it possible to design the new, revolutionary PR121, PR122 and PR123 trip units. The re-engineered hardware architecture allows flexible and precise configuration. It is no longer necessary to completely replace the trip unit with the new Emax – simply add the module which satisfies

your application: A great advantage, both in terms of flexibility and customization. The new Emax always offers you the most configurable solution for your installation requirement, even the most complicated ones.



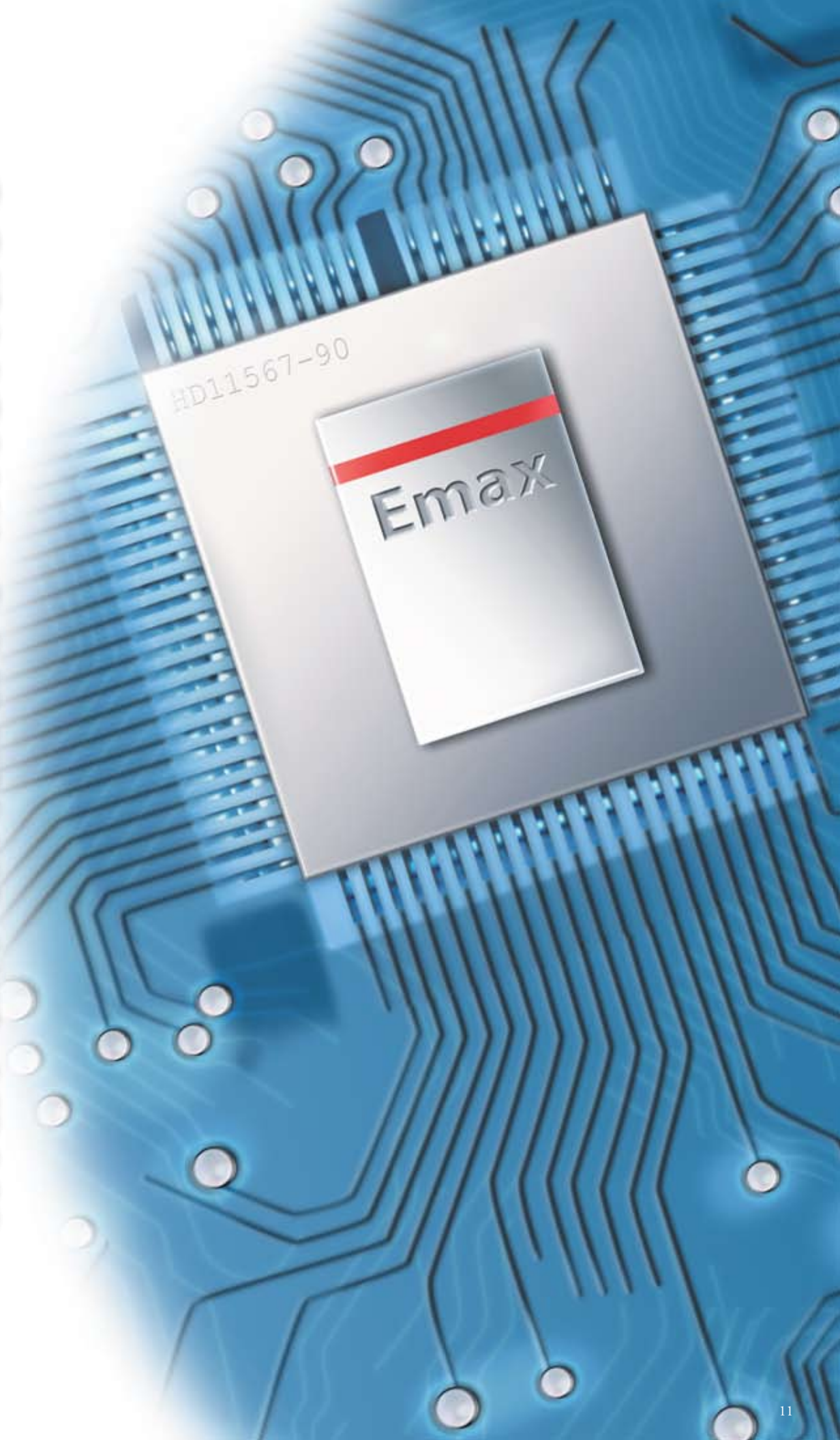
Faults: no problem

Indication of the cause of faults is now available on all the trip unit versions. Furthermore, the exclusive data logger function automatically stores the evolution of the last fault and the information about the last twenty faults, helping you to analyze the cause of supply system interruptions. The new trip units have many types of protection and alarms available, according to the version and configuration selected; features include maximum and minimum frequency, residual current protection and control of energy flow. It is no longer even necessary to use a different

current sensor for each current rating. The new Emax offer you a world of extra solutions which are, at the same time, simple to use. The new PR122 trip unit can now be personalized, thanks to the communication, remote signaling, protection and advanced measurements modules at any time. In addition to these characteristics, the PR123 trip unit makes all the system measurements, from current flow to the analysis of the harmonic content, available on board of the power circuit breaker, with high precision and clarity which makes the traditional external dedicated instruments unnecessary. Moreover, and unique to the market, it offers double protection against short time-delay short circuit (protection “S”), for more efficient discrimination with molded case circuit breakers on the supply side.



**Always at your command
with an intuitive interface**



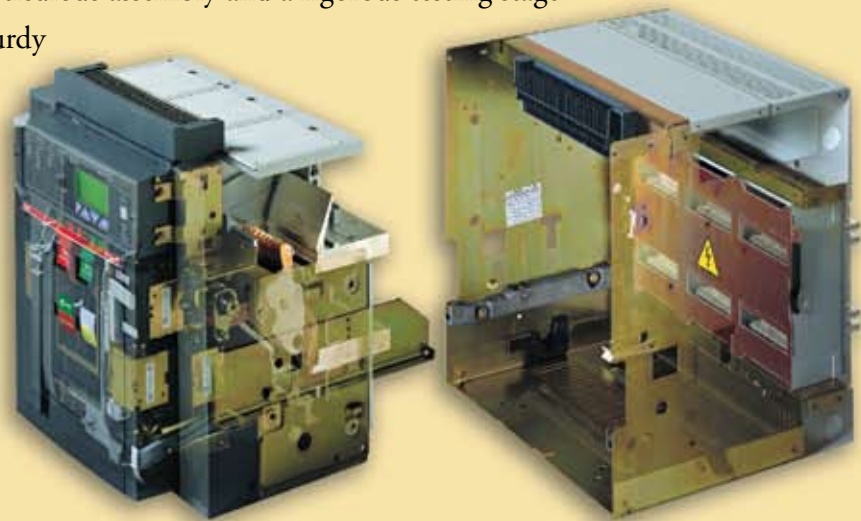


New Emax.

Ensured reliability.

Emax

Reliability and safety have been two of the key factors in the success story of Emax and are a characteristic of the new series, too. Careful selection of materials, meticulous assembly and a rigorous testing stage make the new Emax an extremely reliable and sturdy product, able to withstand high dynamic and thermal stresses for longer than any other circuit breaker in its category. With the new Emax, you are safe and the installation is safe. Furthermore, ABB puts a highly specialized and rapid customer service at your disposal. The new Emax gives you that comfortable feeling of safety which only a reliable product can do.



Certifications

ABB circuit breakers have always been appreciated worldwide for their reliability and versatility. These qualities are consistently recognized by countless international certifications. The new Emax power circuit breakers have a range complying with the ANSI C37.13, C37.16, C37.17 and C37.50 Standards and are certified according to the American UL 1066 Standard. They are certified by the Russian certification body GOST (Russia Certificate of Conformity) and have obtained the China CCC (China Compulsory Certification) certificate. All Emax circuit breakers and their accessories are also in accordance with the international IEC 60947-2, EN 60947 (harmonized in 28 countries by CENELEC), CEI EN 60947 and IEC 61000 Standards and conform to the following EC directives:

- “Low Voltage Directives” (LVD) no. 73/23/CEE (and subsequent variants)
- “Electromagnetic Compatibility Directive” (EMC) no. 89/336/CEE

The series conforms to the regulations for on-board installations and have been approved by the following Shipping Registers:

- ABS (American Bureau of Shipping)
- RINA (Italian Shipping Register)
- Det Norske Veritas
- Bureau Veritas
- Germanischer Lloyd
- Lloyd’s Register of Shipping
- Polskj Rejester Statkow
- RMRS (Russian Maritime Register of Shipping)
- NK (Nippon Kaiji Kyokai)



Certification of conformity with the aforementioned product Standards is carried out in compliance with the European EN 45011 Standard by the Italian certification body ACAE (Association for Certification of Electrical Apparatus), recognized by the European organization LOVAG (Low Voltage Agreement Group). ABB’s Quality System conforms to the international ISO 9001 Standard (model for quality assurance in design, development, manufacturing, installation and assistance), to the equivalent European EN ISO 9001 Standard and to the UNI EN ISO 9001 Italian transposition. The external certifying Body is RINA-QUACER. ABB SACE obtained its first certification with three-year validity in 1990 and has now reached its fourth certification. The manufacturing facility in Frosinone has also obtained ISO 14001 environmental certification.





ABB Inc.
1206 Hatton Road
Wichita Falls, TX 76302
Telephone 888-385-1221; 940-397-7000
Fax 940-397-7085
<http://www.abb-control.com>

Publication LV073
No. 1SXU 200 073 B0202
Printed in USA, October, 2007