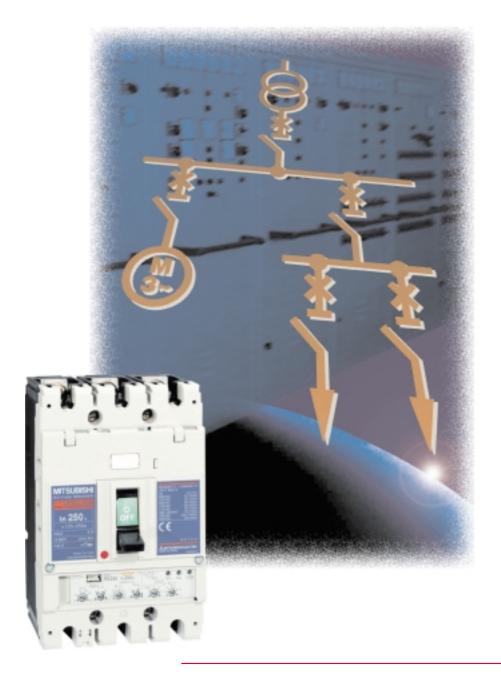


Low Voltage Switchgears Moulded Case Circuit Breakers Disconnectors



WSS, PSS, SS Series 3 – 1600 A

# Intelligent Breaker Technology of the Next Generation

## WSS, PSS and SS – The Extensive Breaker Series

The circuits of the Mitsubishi breaker series are amongst the smallest compact circuit breakers in the world with electronic overload indication of this kind. The system is based, among other things, on the well-known and proven microprocessor technology.







#### **WSS - World Super Series**

The new WSS breaker series meets national and international protection ratings according to VDE, EN, and IEC standards for industrial applications as well as for extended shipping demands. The new tripping technology guarantees a high reliability and highest protection.

- 16 to 250 A in one model size (3- and 4-pole)
- interchangeable relay unit (thermal type or electronic type)
- available in fixed and slot-in versions
- breaking capacity Ics = 100 % Icu, up to 690 V

### **PSS – Progressive Super Series**

The proven Progressive Super Series features technical know-how and the microprocessor technology tried and tested in longstanding experience.

The fully enclosed circuit breakers provide an increased safety and at the same time decreased switching times.

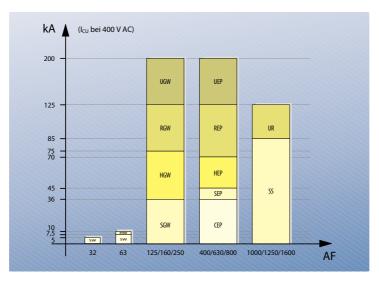
- 400 to 800 A
- 2 model sizes (3- and 4-pole)
- electronic trip system
- available in fixed and slot-in versions
- additional disconnectors available

### SS - Super Series

The proven standard series for a high breaking performance providing an optimum protection for transformer and generator feed in, and output breakers. Circuit breakers can be used as section or disconnecting switch.

- 1000 to 1600 A
- 1 model size (3- and 4-pole)
- electronic trip system
- available in fixed and slot-in versions

Breaking performance The complete range of moulded case circuit breakers from 3 to 1600 A.

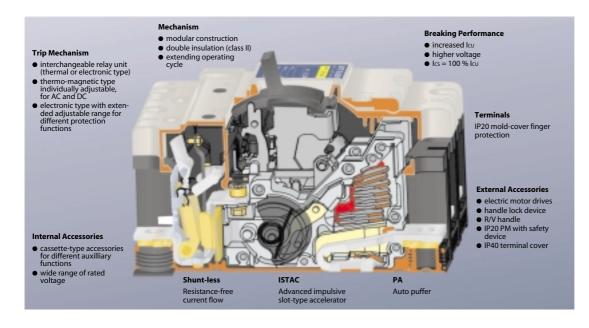


## Intelligent Breaking Technology for Your Safety

With its innovative breaking technology all Mitsubishi breakers offer greater safety and even faster circuit-breaking speed through the use of the latest switch-off technology and innovative engineering, with a newly developed electronic trip relay.



# More Innovation for Distinguished Breaking Performance



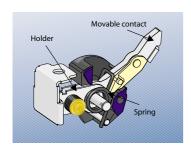


With the WSS series Mitsubishi Electric presents a breaker generation providing an innovative breaker technology for

- more safety
- more flexebility
- more reliability

# Shunt-Less Current Flow Technology

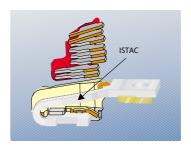
The constructive design of movable and fixed conductors considerably contributes to an increased lifetime.



### ISTAC – The Patented Trip Technology

This advanced technology is based on the proven Mitsubishi patend, and in consideration of the layout of the current leads provides excellent opening cycles of the main conductors.

Consequently, an instant and safe current breaking is guaranteed. By the high-speed opening and the arc driving, the rising rate of the arc



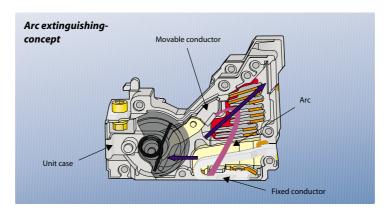
voltage is increased and the peak current is decreased.

Three new technologies developed for sophisticated market demands:

- Shunt-less, the resistance-free current flow technology
- ISTAC, the patented breaking technology
- PA, the auto-puffer for arc extinguishing

### Auto-Puffer – Polymer Ablation Type Auto Puffer

This technology increases the interrupting performance by blowing out the gas to the arc by right angle. The gas pressure which is generated from high-polymer materials is accumulated in the accumulating space, and the gas is blown to the arc to extinguish. Especially this technology improves the high voltage breaking performance.



State of the art technology and materials in particular increase the short-circuit tripping capability by intelligently making use of the gas pressure that results from the arc.



# Versatility for a Safe Installation and Higher Application Capacities

Versatility in easy, quick, and safe installation for higher application capacities. To enhance flexibility, the Mitsubishi WS series is equipped with interchangeable relay units. The units are available in thermal or electronic types.

The alternative use of a thermal adjustable or electronic relay significantly increases the flexibility of the breakers. Consequently, the stockkeeping of spare parts is considerably reduced saving time and money.



## **Thermal Adjustable Relay**

## **Electronic Relay**

Choose the appropriate relay according to your demands.



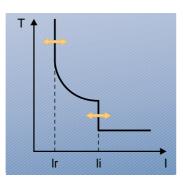


The thermal adjustable relay features a wide thermomagnetic setting range and can be used for AC and DC.

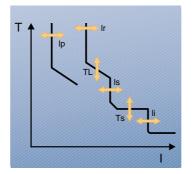
The electronic relay provides options to set all relevant currents or time ranges.
A pre-alarm function is standard equipment.

The relay is particularly used where wide and precise setting ranges are required.

High-level flexibility according to your demands.



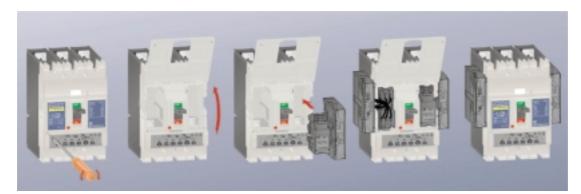
	NF125	NF160	NF250
25	•		
40	•		
63	•		
100	•		
125	•		
160		•	•
250			•
	40 63 100 125 160	25	40



		NF125	NF160	NF250
	25	•		
	40	•		
Æ	63	•		
ıl gt	100	•		
Ratingg In (A)	125	•		
Ra	160		•	
	250			•

# Product Design which Pursues Greater Use Ease by Wide Variations





The accessories simply slot in and out for quick flexible installation.



## Intelligent Breakers enable Networking

Additional modules acquire status information of the breaker and enable networking and communications via the open networks CC-Link and PROFIBUS/DP.

The status information of the breaker directly reaches the central information control to be processed.



MELSHORT 2 is a base software that meets the entire requirements definition for designing an energy distribution plant.

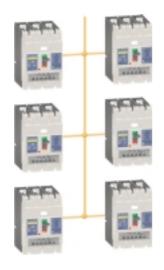
#### **Modular Accessories**

The arrangement and design of pluggable accessories such as indicator and auxiliary contacts allows you to modify the circuit in a way that saves time and space - at any time, even when built in and ready for operation. The presence of separate circuit chambers makes the system even safer.

Thus cassette type accessories ensure flexibility when upgrading circuits.

The cassette type accessories are available in 5 different versions and fit for breaker series from 30 AF up to 800 AF:

- alarm switch (AL)
- auxiliary switch (AX)
- alarm and auxiliary switch (AL+AX)
- shunt trip device (SHT)
- undervoltage trip device (UVT)



The breakers meet all regular requirements regarding energy management and network communications.

# Calculation and Selection Software MELSHORT2

This software provides a quick and easy selection of the appropriate low voltage switchgears according to the required rated operation trip voltage and the respective peripheral equipment.

The program can be operated comfortably, easily, and quickly via interactive menus.

The Software is available on CD-ROM and runs under MS Windows® 95/98/NT4.0 and MS Windows® 2000.



Display of the circuit diagram of the network to be calculated including entry dialog.

# **Model Overview and Specifications**

	Type / Series						WSS		
				NF32-SW	NF63-SW	NF125-SGW RT	NF125-SGW RE	NF160-SGW RT	NF160-SGW RE
	Rated current In max. [A]			32	63	125*	125*	160*	160*
	Rated insulation voltage U	Ji [V]	AC	600	600	690	690	690	690
	Number of poles			3	3/4	3/4	3/4	3/4	3/4
S	Rated breaking	IEC 947-2	690 V AC	_	_	8/8	8/8	8/8	8/8
S series	capacity [kA]	EN 60 947-2 VDE 0660	500 V AC	2,5 / 1	7,5 / 4	30/30	30/30	30/30	30/30
S	(Icu / Ics)		440 V AC	2,5 / 1	7,5 / 4	36/36	36/36	36/36	36/36
			400 V AC	5/2	7,5 / 4	36/36	36/36	36/36	36/36
			230 V AC		15/8	85 / 85	85 / 85	85 / 85	85 / 85
			300 V DC		_	20 / 20**	_	20 / 20**	_
	Dimensions WxHxD		[mm]	75x130x68	75/100x130x68	105/140x165x86	105/140x165x86	105/140x165x86	105/140x165x86
	Type Rated current In max. [A]				NF63-HW	NF125-HGW RT 125*	NF125-HGW RE 125*	NF160-HGW RT 160*	NF160-HGW RE 160*
		I: I\/I			63		690	690	
	Rated insulation voltage L	[۷] וע			690 3 / 4	690 3 / 4		3/4	690
	Number of poles Rated breaking	IEC 947-2	690 V AC		2,5/1	20/20	3 / 4 20 / 20	20 / 20	3 / 4 20 / 20
H series	capacity [kA]	EN 60 947-2	500 V AC		7,5 / 4	50 / 50	50 / 50	50 / 50	50 / 50
Sel		VDE 0660	440 V AC		10/5	65 / 65	65 / 65	65 / 65	65 / 65
I	(lcu / lcs)		400 V AC		10/5	75/75	75/75	75/75	75/75
			230 V AC		25 / 13	100 / 100	100 / 100	100 / 100	100 / 100
			300 V DC		_	40 / 40**	—	40 / 40**	—
	Dimensions WxHxD		[mm]		75/100x130x68	105/140x165x86	 105/140x165x86	105/140x165x86	 105/140x165x86
	Type		[IIIIII]		73/100/130/00	NF125-RGW RT	103/ 140/ 103/00	103/140X103X00	103/ 140/ 103/00
	Rated current In max. [A]					100*			
	Rated insulation voltage U	Ji [V]				690			
	Number of poles					3			
Ś	Rated breaking	IEC 947-2	690 V AC			25 / 25			
R series	capacity [kA]	EN 60 947-2	500 V AC			125 / 125			
S.	(Icu / Ics)	VDE 0660	440 V AC			125 / 125			
	(icu / ici)		400 V AC			125 / 125			
			230 V AC			125 / 125			
			300 V DC			40 / 40**			
	Dimensions WxHxD		[mm]			105x240x86			
	Туре					NF125-UGW RT			
	Rated current In max. [A]					100*			
	Rated insulation voltage L	Ji [V]				690			
	Number of poles					3/4			
U series	Rated breaking	IEC 947-2	690 V AC			30/30			
ser	capacity [kA]	EN 60 947-2 VDE 0660	500 V AC			200 / 200			
<b>-</b>	(lcu / lcs)	10000	440 V AC			200 / 200			
						200/200			
						200 / 200			
			300 V DC			40 / 40**			
	Dimensions WxHxD		mm]			105 / 140x240x86			
	Туре								
	Rated current In max. [A]								
	Rated insulation voltage U	JI [V]							
	Number of poles	IEC 047. 2	COONIC						
ries	Rated breaking capacity [kA]	IEC 947-2 EN 60 947-2	690 V AC						
C series		VDE 0660	500 V AC 440 V AC						
9	(lcu / lcs)		440 V AC						
			230 V AC						
	Dimensions WxHxD		[mm]						
	Type		Lumi	DSN32-SW	DSN63-SW	DSN125-SGW		DSN160-SGW	
	Rated current In max. [A]			32	63	125		160	
ors	Rated insulation voltage U	Ji [V]	AC	600	600	690		690	
ecto	Rated voltage Ue [V]		AC (50/60 Hz) / DC**	500 / 250	500 / 250	690 / 300		690 / 300	
Disconnectors	Number of poles		, 30, 7 00	3	3/4	3/4		3/4	
isco	Max. switching current [A	] (breaking)	AC/DC	250 / 125	500 / 250	1000 / 500		1280 / 640	
	Dimensions WxHxD		,,,,,,	75x130x68	75/100x130x68	105/140x165x86		105/140x165x86	
* adiu									



	WSS		PSS			SS	
NF250-SGW RT	NF250-SGW RE	NF400-SEP	NF630-SEP	NF800-SEP	NF1000-SS	NF1250-SS	NF1600-SS
250*	250*	400*	630*	800*	1000*	1250*	1600*
690	690	690	690	690	690	690	690
3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
8/8	8/8	10/10	10 / 10	10 / 10	25 / 13	25 / 13	25 / 13
30/30	30/30	30 / 30	30/30	30/30	65/33	65/33	65/33
36/36	36/36	42 / 42	42 / 42	42 / 42	85 / 43	85 / 43	85 / 43
36/36							
	36/36	45 / 45	45 / 45	45 / 45	85/43	85/43	85/43
85 / 85	85 / 85	85 / 85	85 / 85	85 / 85	125 / 63	125 / 63	125 / 63
20 / 20**	_	_	_	_	_	_	_
105/140x165x86	105/140x165x86	140/185x257x103	210/280x275x103	210/280x275x103	210/280x406x140	210/280x406x140	210/280x406x140
NF250-HGW RT	NF250-HGW RE	NF400-HEP	NF630-HEP	NF800-HEP			
250*	250*	400*	630*	800*			
690	690	690	690	690			
3/4	3/4	3/4	3/4	3/4			
20 / 20	20 / 20	10 / 10	15 / 15	15 / 15			
50 / 50	50/50	50 / 50	50 / 50	50 / 50			
65 / 65	65 / 65	65 / 65	65 / 65	65 / 65			
75/75	75/75	70/70	70/70	70/70			
100 / 100	100 / 100	100 / 100	100 / 100	100 / 100			
40 / 40**	—	—	—	—			
105/140x165x86	105/140x165x86	140/185x257x103	210/280x275x103	210/280x275x103			
NF250-RGW RT		NF400-REP	NF630-REP	NF800-REP			
225*		400*	630*	800*			
690		690	690	690			
3		3	3	3			
25 / 25		15 / 10	20 / 15	20 / 15			
125 / 125		70 / 35	70 / 35	70 / 35			
125 / 125		125 / 63	125 / 63	125 / 63			
125 / 125		125/63	125 / 63	125/63			
125 / 125		150 / 75	150 / 75	150 / 75			
40 / 40**		_	_	_			
105x240x86		140x257x103	210x275x103	210x275x103			
NF250-UGW RT		NF400-UEP	NF630-UEP	NF800-UEP		NF1250-UR	
225*		400*	630*	800*		1250*	
690		690	690	690		690	
3/4		3/4	3/4	3/4		3/4	
30/30		35/35	35 / 35	35 / 35		_	
200 / 200		170 / 170	170 / 170	170 / 170		85 / 42	
200 / 200		200 / 200	200 / 200	200 / 200		125 / 65	
200/200		200/200	200/200	200/200		125/65	
200 / 200		200 / 200	200 / 200	200 / 200		170 / 85	
40 / 40**		_	_	_			
105/140x240x86		140/280x297/322x200	210/280x322x200	210/280x322x200		240/310x406x144	
		NF-400-CEP	NF630-CEP	NF800-CEP			
		400*	630*	800*			
		600	600	600			
		3	3	3			
		_	_	<del>-</del>			
		15/8	18/9	18/9			
		25 / 13	36 / 18	36 / 18			
		36/18	36/18	36/18			
		50 / 25	50 / 25	50 / 25			
		140x257x103	210x275x103	210x275x103			
				DSN800-SP	DSN1000-SS	DSN1250-SS	DSN1600-SS
DSN250-SGW		DSN400-SP	DSN630-SP				
		DSN400-SP 400	DSN630-SP 630	800	1000	1250	1600
250				800 690	1000 660	1250 660	1600 660
250 690		400 690	630 690	690	660	660	660
250 690 690 / 300		400 690 690 / 250	630 690 690 / 250	690 690 / 250	660 660 / 250	660 660 / 250	660 660 / 250
250 690 690 / 300 3 / 4		400 690 690 / 250 3 / 4	630 690 690 / 250 3 / 4	690 690 / 250 3 / 4	660 660 / 250 3 / 4	660 660 / 250 3 / 4	660 660 / 250 3 / 4
DSN250-SGW 250 690 690 / 300 3 / 4 2000 / 1000 105/140x165x86		400 690 690 / 250	630 690 690 / 250	690 690 / 250	660 660 / 250	660 660 / 250	660 660 / 250

<sup>\*</sup> adjustable \*\* 2 poles in a row

## **Complete Solution for Line and Load Side**

Mitsubishi offers the whole line from Air Circuit Breakers over Low Voltage Switchgears to Magnetic Contactors and Thermal Overload Relays.

The complete solution for all needs.



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