Discrimination tables

1SDC007004D0201

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Introduction

This collection of selectivity and back-up tables for ABB circuit-breakers has been studied to help select the appropriate circuit-breaker, fulfilling the specific selectivity and back-up requirements according to the different type of installation.

The tables are divided on the basis of the type of intervention (back-up or selective protection), and are grouped according to types of circuit-breakers (air, moulded-case, and miniature), covering all the possible combinations of ABB circuit-breakers.

The technical data, updated to the latest series of miniature, moulded-case and air circuit-breakers on the market, make this publication a comprehensive and simple tool: once again, ABB SACE makes its consolidated experience in the Low Voltage sector available to professionals.

Choosing the type of coordination for the protection of a low voltage network

Protective device coordinating problems and needs

The design of a system for protecting an electric network is of paramount importance both to ensure the correct economic and functional operation of the installation as a whole and to reduce any problems caused by anomalous operating conditions and malfunctions proper to a minimum.

The present analysis discusses the coordination between the different devices dedicated to the protection of zones and specific components with a view to:

– guaranteeing safety for people and installation at all times;

– identifying and rapidly excluding only the zone affected by a given problem, instead of taking indiscriminate action and thus reducing the energy availability to the rest of the network;

– containing the effects of a malfunction on other intact parts of the network (voltage dips, loss of stability in the rotating machines);

– reducing the stress on components and damage in the zone affected;

– ensuring the continuity of the service with a good quality feed voltage;

– guaranteeing an adequate backup in the event of any malfunction of the protective device responsible for opening the circuit;

– providing staff and management systems with the information they need to restore the service as rapidly as possible and with a minimal disturbance to the rest of the network;

– achieving a valid compromise between reliability, simplicity and cost effectiveness.

To be more precise, a valid protection system must be able to:

– understand what has happened and where it has happened, discriminating between situations that are anomalous but tolerable and genuine faults within a given zone of influence, avoiding unnecessary tripping and the consequent unjustified disconnection of a healthy part of the system;

– take action as rapidly as possible to contain damage (destruction, accelerated aging, ...), safeguarding the continuity and stability of the power supply.

The solutions stem from a compromise between these two opposing needs -to precisely identify the fault and to act rapidly- and are defined as a function of which of these two requirements takes priority.

For instance, when it is more important to avoid unnecessary tripping, it is generally preferable to have an indirect protection system based on interlocks and data transmission between different devices that measure the electrical quantities locally, whereas for prompt response and a limitation of the destructive effect of short circuits,

a direct-acting system with releases integrated in the devices is needed. Generally speaking, in low voltage systems for primary and secondary distribution, this latter solution is preferable.

Restricting the field to an analysis of the problem of how to harmonize the action of the protective devices in the event of over-currents (overloads and short circuits), a problem that accounts for 90% of the needs for coordinating protective devices in radial low voltage systems, before going any further it becomes important to remember that:

– **over-current discrimination** means "coordination of the operating characteristics of two or more over-current protective devices such that, on the incidence of over-currents within stated limits, the device intended to operate within these limits does so, while the others do not operate"[1];
– **total discrimination** means "over-current discrimination such that, in the case of two over-current protective devices in series, the protective device on the load side provides protection without tripping the other protective device"[2];
– **partial discrimination** means "over-current discrimination such that, in the case of two over-current protective devices in series, the protective device on the load side provides protection up to a given over-current limit without tripping the other device"[3]; said over-current threshold is called the "discrimination limit current I_s"[4];
– **back-up protection** means a "coordination for over-current protection of two protective devices in series, such that the protective device generally (but not necessarily) situated on the feeder side provides over-current protection with or without the aid of the other protective device and avoids excessive stress on the latter"[5]. The current value beyond which the protection is assured is called the "switching current I_B"[6].

Types of over-current coordination

Influence of the network's electrical parameters (rated current and short circuit current)

If we restrict the analysis to the behavior of the protective devices tripped on the basis of over-current releases, the strategy adopted to coordinate the protective devices depends mainly on the rated current (I_n) and short circuit current (I_k) values in the part of network concerned.

Generally speaking, we can classify the following types of coordination:

– current discrimination;
– time (or time-current) discrimination;
– zone (or logical) discrimination;
– energy-based discrimination;
– back-up.

Now let's examine these various solutions in detail.

[1] Reference Standard IEC 60947-1, def. 2.5.23
[2] Reference Standard IEC 60947-2, def. 2.17.2
[3] Reference Standard IEC 60947-2, def. 2.17.3
[4] Reference Standard IEC 60947-2, def. 2.17.4
[5] Reference Standard IEC 60947-1, def. 2.5.24
[6] Reference Standard IEC 60947-1, def. 2.5.25 and IEC 60947-1, def. 2.17.6

Current discrimination

This type of discrimination is based on the observation that the closer the fault comes to the network's feeder, the greater the short circuit current will be. We can therefore pinpoint the zone where the fault has occurred simply by calibrating the protective devices to a limit value such that does not generate unnecessary tripping due to faults in the zone of influence of the protective device immediately downstream (where the fault current has to be lower than the current threshold set on the protective device further upstream).

We can normally achieve total discrimination only in specific cases where the fault current is not very high (and comparable with the device's rated current) or where a component with high impedance comes between the two protective devices (e.g. a transformer, a very long or slender cable, ...) giving rise to a large difference between the short circuit current values.

This type of coordination is consequently feasible mainly in final distribution networks (with low rated current and short circuit current values and a high impedance of the connection cables).

The devices' time-current tripping curves are generally used for the study.

This solution is intrinsically rapid (instantaneous), easy to implement and inexpensive.

On the other hand:

– the discrimination limit current is normally low, so the discrimination is often only partial;
– the threshold setting of the over-current protective devices rapidly exceeds the values consistent with safety requirements, becoming incompatible with the need to contain the damage caused by short circuits;
– it becomes impossible to provide for a redundancy of the protective devices that can guarantee the elimination of the fault in the event of any of the protective devices failing to function.

Time discrimination

This type of discrimination is an evolution from the previous one. Using this type of coordination, in order to define the tripping threshold, the current value measured is associated with the duration of the phenomenon: a given current value will trip the protective devices after an established time delay, such that allows for any protective devices situated closer to the fault to be tripped, thus excluding the zone where the fault has occurred.

The setting strategy is therefore based on progressively increasing the current threshold and the time delays for tripping the protective devices as we come closer to the power supply source (the setting level correlates directly with the hierarchical level). The steps between the time delays set on protective devices in series must take into account the sum of the times for detecting and eliminating the fault and the overshoot of the device upstream (the time interval during which the protective device may trip even if the phenomenon has already ended). As in the case of current discrimination, the study is based on a comparison of the time-current protective device tripping curves.

This type of coordination is generally:

– easy to study and implement, and inexpensive as concerns the protective system;
– it enables us to achieve even high discrimination levels, depending on the short-time current that the device upstream can withstand;
– it allows a redundancy of the protective functions and can send valid information to the control system;

but:

but:
– the tripping times and the energy levels that the protective devices (especially those close to the sources) let through are high, with obvious problems concerning safety and damage to the components (often overdimensioned) even in zones unaffected by the fault;
– it enables the use of current-limiting circuit-breakers only at levels hierarchically lower down the chain; the other circuit-breakers have to be capable of withstanding the thermal and electro-dynamic stresses related to the passage of the fault current for the intentional time delay. Selective circuit-breakers, often of the open type, have to be used for the various levels (category B circuit- according to the IEC standard 60947-2) to guarantee a sufficiently high short-time current;
– the duration of the disturbance induced by the short circuit current on the power supply voltages in the zones unaffected by the fault can pose problems with electronic and electro-mechanical devices (voltage dips to below the electromagnetic releasing value);
– the number of discrimination levels is limited by the maximum time that the network can stand without loss of stability.

Zone (or logical) discrimination

This type of coordination is a further evolution of the time discrimination and may be direct or indirect. Generally speaking, it is implemented by means of a dialogue between current-measuring devices that, when they ascertain that a setting threshold has been exceeded, they enable the correct identification and disconnection of the zone affected by the fault alone.

In practice, they can be implemented in two ways:
– the measuring devices send information on the preset current threshold that has been exceeded to the supervisor system and the latter decides which protective device to trip;
– in the event of current values exceeding its setting threshold, each protective device sends a cutout signal via a direct connection or bus to the protective device higher in the hierarchy (i.e. upstream with respect to the direction of the power flow) and, before it trips, it makes sure that a similar cutout signal has not arrived from the protective device downstream; in this way, only the protective device immediately upstream from the fault is tripped.

The first mode leads to tripping times of around 0.5-5 s and is used mainly in the case of not particularly high short circuit currents with a power flow having no unequivocally defined direction (e.g. for lighting systems in long tunnels).

The second enables distinctly shorter tripping times: with respect to a time discrimination type of coordination, there is no longer any need to increase the intentional time delay progressively as we move closer to the source of the power supply. The delay can be reduced to a waiting time sufficient to rule out any presence of a cutout signal from the protective device downstream (the time it takes for the device to detect the anomalous situation and successfully complete the transmission of the signal).
With respect to a time discrimination type of coordination, zone discrimination implemented in this way:
– reduces the tripping times and increases the safety level; the tripping times will be around 100 milliseconds;
– it reduces both the damage caused by the fault and the disturbance in the power supply network;
– it reduces the thermal and dynamic stresses on the circuit-breakers;
– it enables a much larger number of discrimination levels.

But it is more troublesome in terms of the cost and the complexity of the system. The high performance required makes it necessary to resort to overdimensioning (though

to a lesser degree than in the case of pure time discrimination), special components, additional wiring, auxiliary power sources, ...

This solution is therefore used mainly in systems with high rated current and short circuit current values, with inescapable needs in terms of both safety and continuity of service. In particular, we often find examples of such logical discrimination in primary distribution switchboards, immediately downstream from transformers and generators. Another interesting application lies in the combined use of zone and time discrimination, in which the stretches of the coordination chain managed logically have protective device tripping times for short circuits that decrease progressively as we move further up towards the power supply source.

Energy-based discrimination

Energy-based coordination is a particular type of discrimination that exploits the current-limiting characteristics of moulded-case circuit-breakers. It is important to remember that a current-limiting circuit-breaker is "a circuit-breaker with a break-time short enough to prevent the short-circuit current reaching its otherwise attainable peak value"[7].

In practice, all the ABB SACE moulded-case circuit-breakers in the Isomax and Tmax ranges have more or less accentuated current-limiting features, achieved by

– reaching a valid compromise between the release's ability to withstand current values lower than the instantaneous tripping threshold and the repulsion of the main contacts at short-circuit current levels;
– triggering a rapid displacement of the arc inside the arcing chamber (magnetic blow-out) suitably designed to generate a high arcing voltage;
– placing several arcing chambers in series, with contacts optimized to serve different purposes (main opening in case of short circuit, backup opening principally for disconnection and opposition to the recovery voltage, etc.).

In short-circuit conditions, these circuit-breakers are extremely rapid (with tripping times of a few milliseconds) and open in the event of a strong asymmetric component; so the time-current tripping (downstream circuit-breaker) and non-tripping (upstream circuit-breaker) curves obtained with symmetrical sine wave forms cannot be used to study the coordination. The phenomena are mainly dynamic (and therefore proportional to the square of the instantaneous current value) and can be described using the specific let-through energy and limit non-tripping energy curves for the circuit-breaker upstream.

What generally happens is that the energy associated with the tripping of the circuit-breaker downstream is lower than the energy value needed to complete the opening of the circuit-breaker upstream. To ensure a fair level of reliability, avoiding any overdimensioning or transient contact repulsion phenomena in the circuit-breaker upstream, this calculation should be integrated with additional information such as the current limiting curves (peak Ip value – prospective value of the symmetrical component of the short-circuit current) and the setting for contact repulsion.

This type of discrimination is certainly more difficult to consider than the previous ones because it depends largely on the interaction between the two devices placed in series (wave forms, ...) and demands access to data often unavailable to the end user. Manufacturers provide tables, rules and calculation programs in which the minimum discrimination limits are given for short-circuit conditions between different combinations of circuit-breakers. These limits are defined by theoretically integrating the results of a large number of tests performed in compliance with the requirements of appendix A of the IEC standard 60947-2.

[7] Reference Standard IEC 60947-2, def. 2.3

The advantages of using this type of coordination include:
– circuit-breaking is fast, with tripping times that become shorter as the short-circuit current increases; this consequently reduces the damage caused by the fault (thermal and dynamic stresses), the disturbance to the power supply system, the dimensioning costs, …;
– the discrimination level is no longer limited by the value of the short-time current Icw that the devices can withstand;
– a large number of hierarchically different levels can be coordinated;
– different current-limiting devices (fuses, circuit-breakers, ...) can be coordinated, even if they are situated in intermediate positions along the chain.

This type of coordination is used above all for secondary and final distribution networks, with rated currents below 1600A.

Back-up protection

With backup protection, the discriminating power is sacrificed in favor of the need to "support" the devices downstream that have to break short-circuit currents beyond their breaking capacity. In this case, over and above the switching current I_B, we need to ensure the simultaneous opening of both the protective devices situated in series or, alternatively, of the circuit-breaker upstream alone (a somewhat rare case, typical of a configuration comprising an automatic circuit-breaker upstream and an isolator downstream).

Manufacturers provide tables derived from tests based on the previously-mentioned appendix A of the IEC standard 60947-2.

These combinations can be calculated according to the instructions given in section A.6.2 of the aforesaid standard, comparing:
– the value of the Joule integral of the device being protected at its breaking capacity with that of the device upstream at the estimated current of the association (maximum short-circuit current for which backup protection is provided);
– the effects induced in the device downstream (e.g. arcing energy, maximum peak current, limited current) at the peak current value during the tripping of the protective device against a short-circuit upstream.

Conclusions

Technically, a number of solutions can be adopted for the coordination of the protective devices in a network.

The choice of which type of coordination to use in the various zones of the installation is strictly related to network and design parameters and stems from series of compromises in which the objectives in terms of reliability and required availability are balanced against the costs and the containment of the risks within acceptable limits.

The designer's task is to choose a solution, for the various zones in the network, from among those available that offers the best balance between technical and financial requirements as a function of:
– functional and safety requirements (acceptable risk levels) and reliability (availability of the system);
– the reference value of the electrical quantities;
– the costs (protective devices, control systems, interlocking components, …);
– the effects, the allowable duration and the cost of outages;
– future evolution of the system.

For each of the proposed solutions, there is a combination of ABB products available that can meet these needs.

Discrimination tables

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Using the back-up and discrimination tables

Back-up

These tables provide the value (in kA, referred to the breaking capacity according to the Standard IEC 60947-2) for which back-up protection is ensured between a given combination of circuit-breakers. The tables cover possible combinations between ABB SACE moulded-case circuit-breakers in the Tmax and Isomax ranges and between the above mentioned circuit-breakers and the ABB range of miniature circuit-breakers. The values given in the tables refer to a rated voltage Vn of 415 V AC for combinations between moulded-case circuit-breakers and to a rated voltage Vn of 400 V AC for combinations between moulded-case and miniature circuit-breakers.

Discrimination

These tables provide the value (in kA, referred to the breaking capacity according to the Standard IEC 60947-2) for which discrimination protection is ensured between a given combination of circuit-breakers. The tables cover possible combinations between ABB SACE air circuit-breakers in the Emax range, ABB SACE moulded-case circuit-breakers in the Tmax and Isomax ranges and the range of ABB miniature circuit-breakers. The values given in the tables represent the maximum value achievable for discrimination between the circuit-breaker upstream and the one downstream with reference to a rated voltage Vn of 415 V AC for combinations between air and moulded-case circuit-breakers or between moulded-case and moulded-case versions, and a rated voltage Vn of 400 V AC for combinations between moulded-case and miniature circuit-breakers.

These values are obtained following particular specifications that, if they are not fully complied with, could lead in some cases to discrimination values far below those indicated. Some of these can be generalized and are given below, others refer exclusively to particular types of circuit-breaker and will be the object of a note under the relevant table.

General specifications:

- Function I of the electronic releases (PR112/P-PR113/P, PR211/P-PR212/P, PR221DS) in the circuit-breakers upstream must be disabled (I_3 in OFF);
- The magnetic threshold of thermo magnetic (TM) or magnetic only (M) circuit-breakers situated upstream must be ≥ 10xIn and adjusted to the maximum setting;
- It is of paramount importance to make sure that the settings adopted by the user for the electronic releases in circuit-breakers situated both upstream and downstream do not create intersections in the time-current curves, in the area of the overload protection (L function) and in the area of the selective short-circuit protection (S function). It is always advisable to check the time-current curves (in the area of the overload protection – L function) also if thermo magnetic circuit-breakers are used.

Discrimination tables

Introduction

Notes

The letter **T** indicates total selectivity for the given combination, the corresponding value in kA is obtained considering the lower of the downstream and upstream circuit-breakers' breaking capacities (I_{cu}).

The following tables show the breaking capacities at 415 V AC for SACE Emax, Isomax and Tmax circuit-breakers.

Isomax @ 415V AC	
Version	I_{cu} [kA]
B	16
N	35*
S	50
H	65 (S8H = 85 kA)
L	100 (S3L = 85 kA)
X	200 (S2X = 70 kA)

Tmax @ 415V AC	
Version	I_{cu} [kA]
B	16
C	25
N	36
S	50
H	70
L	85

Emax @ 415V AC	
Version	I_{cu} [kA]
B	42
N	65**
S	75
H	100
L	130
V	150

* Versions certified at 36 kA; for Isomax S1 versions N I_{cu} = 25 kA

** For Emax E1 N Version I_{cu} = 50 kA

Caption

For air or moulded-case circuit-breakers:

TM = thermo magnetic release

M = magnetic only release

EL = microprocessor based release

For miniature circuit-breakers:

B = characteristic trip (Im=3...5In)

C = characteristic trip (Im=5...10In)

D = characteristic trip (Im=10...20In)

K = characteristic trip (Im=8...14In)

Z = characteristic trip (Im=2...3In)

Graphic symbols

MCB Tmax Isomax Emax

Discrimination tables

Back-up

Back-up

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax - MCB @ 400V

			Supply s.	T1	T1	T1	T2	T3	T2	T3	T2	T2
	Version			B	C	N			S		H	L
Load s.	Char.	I_n [A]	I_{cu} [kA]	16	25	36			50		70	85
S240	C	6..10	7.5	16	25	30	36	36	36	40	40	40
		13..40						16		16		
S250	B,C,K	6..10	10	16	25	30	36	36	36	40	40	40
		13..63						16		16		
S260	B,C	6..10	10	16	25	30	36	36	36	40	40	40
		13..63						16		16		
S270	B,C,D	6..10	15	16	25	30	36	36	50	40	70	85
		13..63						25		25	60	60
S270	Z	6..10	10	16	25	30	36	36	36	40	40	40
		13..63						16		16		
S280	B,C,D,K,Z	6..10	15			30	36	36	50	40	70	85
		13..25	25					30		30	60	60
		32..40	20		25			25		25		
		50..63	15	16				25		25		
		80, 100	6	16	16	16		16	36	16	36	36
S290	C,D,K	80..125	15	16	25	30	36	30	50	30	70	85




Back-up

Supply side circuit-breaker: Isomax
Load side circuit-breaker: MCB

Isomax - MCB @ 400V

			Supply s.	S3	S4	S3	S4	S3	S4	S3 I_u 125	S3 I_u 200	S4
	Version			N		H		L		X		
Load s.	Char.	I_n [A]	I_{cu} [kA]	36		65		85	100	200		
S240	C	6..40	7.5							10		
S250	B,C,K	6..63	10	16	16	16	16	16	16	20	20	20
S260	B,C	6..63	10	16	16	16	16	16	16	20	20	20
S270	B,C,D	6..63	15	25	20	25	20	25	20	25	25	25
S270	Z	6..63	10	16	16	16	16	16	16	20	20	20
S280	B,C,D,K,Z	6..8	15	25	20	25	20	25	20	25	25	25
		10..25	25	30	30	30	30	30	30	35	35	30
		32..40	20	25	25	25	25	25	25	30	25	25
		50..63	15	25	20	25	20	25	20	25	25	25
		80, 100	6	16		16		16		16	16	
S290	C,D,K	80..125	15	25	20	25	20	25	20	25	25	25




Back-up

Supply side circuit-breaker: Tmax
Load side circuit-breaker: Tmax

Tmax - Tmax @ 415V

		Supply s.	T1	T1	T2	T3	T2	T3	T2	T2
	Version		C	N			S		H	L
Load s.		I_{cu} [kA]	25	36			50		70	85
T1	B	16	25	36	36	36	50	50	70	85
T1	C	25		36	36	36	50	50	70	85
T1	N	36					50	50	70	85
T2							50	50	70	85
T3								50		
T2	S	50								85
T2	H	70								85




Back-up

Supply side circuit-breaker: Tmax
Load side circuit-breaker: Isomax

Tmax - Isomax @ 415V

		Supply s.	T1	T1	T2	T3	T2	T3	T2	T2
	Version		C	N			S		H	L
Load s.		I_{cu} [kA]	25	36			50		70	85
S1	B	16	25	36	36	36	50	50	70	85
S2			25	36	36	36	50	50	70	85
S1	N	25		36	36	36	50	50	70	85
S2	N	36					50	50	70	85
S3								50		
S2	S	50								85
S3	H	65								




Back-up

Supply side circuit-breaker: Isomax
Load side circuit-breaker: Tmax

Isomax - Tmax @ 415V

		Supply s.	S2	S3	S4	S5	S6	S2	S6	S7	S3	S4	S5	S6	S7	S3	S4	S5	S6	S7	S3 I_u 125	S3 I_u 200	S4	S6
	Version		N					S			H					L					X			
Load s.		I_{cu} [kA]	36					50			65					85	100				200			
T1	B	16	36	36	30	30	30	50	36		40	40	40	40		50	50	50	50		130	85	65	50
T1	C	25	36	36	36	36	36	50	50	50	65	65	65	65	50	85	85	85	70	50	170	150	130	70
T1	N	36						50	50	50	65	65	65	65	50	85	100	100	70	50	170	150	130	70
T2								50	50	50	65	65	65	65	65	85	100	100	85	85	200	200	200	100
T3									50	50	65	65	65	65	50	85	100	100	100	50		200	200	100
T2	S	50									65	65	65	65	65	85	100	100	85	85	200	200	200	130
T3											65	65	65	65		85	100	100	100			200	200	130
T2	H	70														85	100	100	85	85	200	200	200	150
T2	L	85															100	100			200	200	200	150




Back-up

Supply side circuit-breaker: Isomax
Load side circuit-breaker: Isomax

Isomax - Isomax @ 415V

		Supply s.	S6	S7	S3	S4	S5	S6	S7	S3	S4	S5	S6	S7	S3 I_u 125	S3 I_u 200	S4	S6
	Version		S		H					L					X			
Load s.		I_{cu} [kA]	50		65					85	100				200			
S3	N	36	50	40	65	65	65	65	40	85	100	65	65	40		200	200	100
S4			50	40			65	65	40			65	65	40				100
S5			50	40				65	40				85	40				170
S6				40					40					50				
S6	S	50												85				200
S3	H	65								85	100	100	100			200	200	200
S4												100	100					200
S5													100	85				200
S6														85				200
S3	L	85									100	100	100			200	200	200
S4		100																200
S5																		200
S6																		200




Discrimination tables

Discrimination

Discrimination

Supply side circuit-breaker: MCB
Load side circuit-breaker: MCB

S290 - S240 @ 400V

		Supply s.	S290	
	I_{cu} [kA]		15	
		I_n [A]	80	100
Load s.		Char.	D	D
S240	7.5	6	C	T	T
		8	C	T	T
		10	C	5	T
		13	C	4.5	7
		16	C	4.5	7
		20	C	3.5	5
		25	C	3.5	5
		32	C		4.5
		40	C		

S290 - S250 @ 400V

		Supply s.	S290	
	I_{cu} [kA]		15	
		I_n [A]	80	100
Load s.		Char.	D	D
S250	10	<=2	C	T	T
		3	C	T	T
		4	C	T	T
		6	B-C	T	T
		8	B-C	T	T
		10	B-C	5	8
		13	B-C	4.5	7
		16	B-C	4.5	7
		20	B-C	3.5	5
		25	B-C	3.5	5
		32	B-C		4.5
		40	B-C		
		50	B-C		
		63	B-C		




Discrimination

Supply side circuit-breaker: MCB
Load side circuit-breaker: MCB

S290 - S250 @ 400V

		Supply s.	S290	
	I_{cu} [kA]		15	
		I_n [A]	80	100
Load s.		Char.	D	D
S250	10	<=2	K	T	T
		3	K	T	T
		4	K	T	T
		6	K	T	T
		8	K	T	T
		10	K	5	8
		16	K	3	5
		20	K	3	7
		25	K		4
		32	K		
		40	K		
		50	K		
		63	K		

S290 - S260 @ 400V

		Supply s.	S290	
	I_{cu} [kA]		15	
		I_n [A]	80	100
Load s.		Char.	D	D
S260	10	<=2	C	T	T
		3	C	T	T
		4	C	T	T
		6	B-C	T	T
		8	B-C	T	T
		10	B-C	5	8
		13	B-C	4.5	7
		16	B-C	4.5	7
		20	B-C	3.5	5
		25	B-C	3.5	5
		32	B-C		4.5
		40	B-C		
		50	B-C		
		63	B-C		




Discrimination

Supply side circuit-breaker: MCB
Load side circuit-breaker: MCB

S290 - S270 @ 400V

			Supply s.	S290	
	I_{cu} [kA]			15	
		I_n [A]		80	100
Load s.			Char.	D	D
S270	15	<=2	C	T	T
		3	C	T	T
		4	C	T	T
		6	B-C	10.5	T
		8	B-C	10.5	T
		10	B-C	5	8
		13	B-C	4.5	7
		16	B-C	4.5	7
		20	B-C	3.5	5
		25	B-C	3.5	5
		32	B-C		4.5
		40	B-C		
		50	B-C		
		63	B-C		

S290 - S270 @ 400V

			Supply s.	S290	
	I_{cu} [kA]			15	
		I_n [A]		80	100
Load s.			Char.	D	D
S270	15	<=2	D	T	T
		3	D	T	T
		4	D	T	T
		6	D	10.5	T
		8	D	10.5	T
		10	D	5	8
		16	D	3	5
		20	D	3	5
		25	D	2.5	4
		32	D		4
		40	D		
		50	D		
		63	D		




Discrimination

Supply side circuit-breaker: MCB
Load side circuit-breaker: MCB

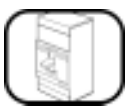
S290 - S270 @ 400V

		Supply s.	S290	
	I_{cu} [kA]		15	
		I_n [A]	80	100
Load s.		Char.	D	D
S270	10	<=2	Z	T	T
		3	Z	T	T
		4	Z	T	T
		6	Z	T	T
		8	Z	T	T
		10	Z	5	8
		16	Z	4.5	7
		20	Z	3.5	5
		25	Z	3.5	5
		32	Z	3	4.5
		40	Z	3	4.5
		50	Z		3
		63	Z		

S290 - S280 @ 400V

		Supply s.	S290	
	I_{cu} [kA]		15	
		I_n [A]	80	100
Load s.		Char.	D	D
S280	15	6	B-C	10.5	T
	25	10	B-C	5	8
		13	B-C	4.5	7
		16	B-C	4.5	7
		20	B-C	3.5	5
		25	B-C	3.5	5
	20	32	B-C		4.5
		40	B-C		
	15	50	B-C		
		63	B-C		






Discrimination

Supply side circuit-breaker: MCB
Load side circuit-breaker: MCB

S290 - S280 @ 400V

			Supply s.	S290	
	I_{cu} [kA]			15	
		I_n [A]		80	100
Load s.			Char.	D	D
S280	15	6	D	10.5	T
	25	10	D	5	8
		16	D	3	5
		20	D	3	5
		25	D	2.5	4
	20	32	D		4
		40	D		
	15	50	D		
		63	D		

S290 - S280 @ 400V

			Supply s.	S290	
	I_{cu} [kA]			15	
		I_n [A]		80	100
Load s.			Char.	D	D
S280	15	6	K	10.5	T
	25	10	K	5	8
		13	K	3	5
		16	K	3	5
		20	K	3	5
		25	K		4
	20	32	K		
		40	K		
	15	50	K		
		63	K		




Discrimination

Supply side circuit-breaker: MCB
Load side circuit-breaker: MCB

S290 - S280 @ 400V

			Supply s.	S290	
	I_{cu} [kA]			15	
		I_n [A]		80	100
Load s.			Char.	D	D
S280	∞	<=2	Z	T	T
	15	3	Z	T	T
		4	Z	T	T
		6	Z	10.5	T
	25	10	Z	5	8
		13	Z	4.5	7
		16	Z	4.5	7
		20	Z	3.5	5
		25	Z	3.5	5
	20	32	Z	3	4.5
		40	Z	3	4.5
	15	50	Z		3
		63	Z		

S290 - S500 @ 400V

			Supply s.	S290	
	I_{cu} [kA]			15	
		I_n [A]		80	100
Load s.			Char.	D	D
S500	50	6	B-C-D	6	10
		10	B-C-D	6	10
		13	B-C-D	6	10
		16	B-C-D	6	10
		20	B-C-D	6	7.5
		25	B-C-D	4.5	6
		32	B-C-D		6
		40	B-C-D		
		50	B-C-D		
		63	B-C-D		




Discrimination

Supply side circuit-breaker: MCB
Load side circuit-breaker: MCB

S290 - S500 @ 400V

			Supply s.	S290	
	I_{cu} [kA]			15	
		I_n [A]		80	100
Load s.			Char.	D	D
S500	50	<=5.8	K	T	T
		5.3..8	K	10	T
		7.3..11	K	7.5	T
	30	10..15	K	4.5	10
		14..20	K	4.5	6
		18..26	K		4.5
		23..32	K		
		29..37	K		
		34..41	K		
		38..45	K		




Discrimination

Supply side circuit-breaker: MCB
Load side circuit-breaker: MCB

S500 - S240 @ 400V

		Supply s.	S500			
	I_{cu} [kA]		50			
		I_n[A]	32	40	50	63
Load s.		Char.	D	D	D	D
S240	7.5	6	C	1.5	2	3	5.5
		8	C	1.5	2	3	5.5
		10	C	1	1.5	2	3
		13	C		1.5	2	3
		16	C			2	3
		20	C				2.5
		25	C				
		32	C				
		40	C				

S500 - S250 @ 400 V

		Supply s.	S500			
	I_{cu} [kA]		50			
		I_n[A]	32	40	50	63
Load s.		Char.	D	D	D	D
S250	10	<=2	C	T	T	T	T
		3	C	3	6	T	T
		4	C	2	3	6	T
		6	B-C	1.5	2	3	5.5
		8	B-C	1.5	2	3	5.5
		10	B-C	1	1.5	2	3
		13	B-C		1.5	2	3
		16	B-C			2	3
		20	B-C				2.5
		25	B-C				
		32	B-C				
		40	B-C				
		50	B-C				
		63	B-C				




Discrimination

Supply side circuit-breaker: MCB
Load side circuit-breaker: MCB

S500 - S250 @ 400V

		Supply s.	S500			
	I_{cu} [kA]		50			
		I_n [A]	32	40	50	63
Load s.		Char.	D	D	D	D
S250	10	<=2	K	T	T	T	T
		3	K	3	6	T	T
		4	K	2	3	6	T
		6	K	1.5	2	3	5.5
		8	K	1.5	2	3	5.5
		10	K		1.5	2	3
		16	K				2
		20	K				
		25	K				
		32	K				
		40	K				
		50	K				
		63	K				

S500 - S260 @ 400V

		Supply s.	S500			
	I_{cu} [kA]		50			
		I_n [A]	32	40	50	63
Load s.		Char.	D	D	D	D
S260	10	<=2	C	T	T	T	T
		3	C	3	6	T	T
		4	C	2	3	6	T
		6	B-C	1.5	2	3	5.5
		8	B-C	1.5	2	3	5.5
		10	B-C	1	1.5	2	3
		13	B-C		1.5	2	3
		16	B-C			2	3
		20	B-C				2.5
		25	B-C				
		32	B-C				
		40	B-C				
		50	B-C				
		63	B-C				




Discrimination

Supply side circuit-breaker: MCB
Load side circuit-breaker: MCB

S500 - S270 @ 400V

		Supply s.	S500			
	I_{cu} [kA]		50			
		I_n [A]	32	40	50	63
Load s.		Char.	D	D	D	D
S270	15	<=2	C	T	T	T	T
		3	C	3	6	T	T
		4	C	2	3	6	T
		6	B-C	1.5	2	3	5.5
		8	B-C	1.5	2	3	5.5
		10	B-C	1	1.5	2	3
		13	B-C		1.5	2	3
		16	B-C			2	3
		20	B-C				2.5
		25	B-C				
		32	B-C				
		40	B-C				
		50	B-C				
		63	B-C				

S500 - S270 @ 400V

		Supply s.	S500			
	I_{cu} [kA]		50			
		I_n [A]	32	40	50	63
Load s.		Char.	D	D	D	D
S270	15	<=2	D	T	T	T	T
		3	D	3	6	T	T
		4	D	2	3	6	T
		6	D	1.5	2	3	5.5
		8	D	1.5	2	3	5.5
		10	D	1	1.5	2	3
		16	D			1.5	2
		20	D				2
		25	D				
		32	D				
		40	D				
		50	D				
		63	D				




Discrimination

Supply side circuit-breaker: MCB
Load side circuit-breaker: MCB

S500 - S270 @ 400V

		Supply s.	S500			
	I_{cu} [kA]		50			
		I_n [A]	32	40	50	63
Load s.		Char.	D	D	D	D
S270	10	<=2	Z	T	T	T	T
		3	Z	3	6	T	T
		4	Z	2	3	6	T
		6	Z	1.5	2	3	5.5
		8	Z	1.5	2	3	5.5
		10	Z	1	1.5	2	3
		16	Z	1	1.5	2	3
		20	Z		1.5	2	2.5
		25	Z			2	2.5
		32	Z				2
		40	Z				
		50	Z				
		63	Z				

S500 - S280 @ 400V

		Supply s.	S500			
	I_{cu} [kA]		50			
		I_n [A]	32	40	50	63
Load s.		Char.	D	D	D	D
S280	15	6	B-C	1.5	2	3	5
	25	10	B-C	1	1.5	2	3
		13	B-C		1.5	2	3
		16	B-C			2	3
		20	B-C				2.5
		25	B-C				
	20	32	B-C				
		40	B-C				
	15	50	B-C				
		63	B-C				




Discrimination

Supply side circuit-breaker: MCB
Load side circuit-breaker: MCB

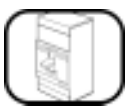
S500 - S280 @ 400V

			Supply s.	S500			
	I_{cu} [kA]			50			
		I_n [A]		32	40	50	63
Load s.			Char.	D	D	D	D
S280	15	6	D	1.5	2	3	5
	25	10	D	1	1.5	2	3
		16	D			1.5	2
		20	D				2
		25	D				
	20	32	D				
		40	D				
	15	50	D				
		63	D				

S500 - S280 @ 400V

			Supply s.	S500			
	I_{cu} [kA]			50			
		I_n [A]		32	40	50	63
Load s.			Char.	D	D	D	D
S280	15	6	K	1.5	2	3	5
	25	10	K		1.5	2	3
		13	K			1.5	2
		16	K				2
		20	K				
		25	K				
	20	32	K				
		40	K				
	15	50	K				
		63	K				






Discrimination

Supply side circuit-breaker: MCB
Load side circuit-breaker: MCB

S500 - S280 @ 400V

			Supply s.	S500			
	I_{cu} [kA]			50			
		I_n [A]		32	40	50	63
Load s.			Char.	D	D	D	D
S280	∞	<=2	Z	T	T	T	T
	15	3	Z	3	6	T	T
		4	Z	2	3	6	T
		6	Z	1.5	2	3	5.5
	25	10	Z	1	1.5	2	3
		13	Z	1	1.5	2	3
		16	Z	1	1.5	2	3
		20	Z		1.5	2	2.5
		25	Z			2	2.5
	20	32	Z				2
		40	Z				
	15	50	Z				
		63	Z				




Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

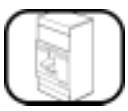
Tmax T1 - S240 @ 400V

		Supply s.	T1										
		Version	B,C,N										
		Release	TM										
		I_u [A]	160										
Load s.	I_{cu} [kA]	Char.	I_n [A]	16	20	25	32	40	50	63	80	100	125	160
S240	7.5	C	6	5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T
		C	8		5.5	5.5	5.5	5.5	5.5	T	T	T	T	T
		C	10			3	3	3	4.5	T	T	T	T	T
		C	13				3	3	4.5	T	T	T	T	T
		C	16					3	4.5	5	T	T	T	T
		C	20						3	5	6	T	T	T
		C	25							5	6	T	T	T
		C	32								6	T	T	T
		C	40									T	T	T

Tmax T1 - S250 @ 400V

		Supply s.	T1										
		Version	B,C,N										
		Release	TM										
		I_u [A]	160										
Load s.	I_{cu} [kA]	Char.	I_n [A]	16	20	25	32	40	50	63	80	100	125	160
S250	10	C	<=2	T	T	T	T	T	T	T	T	T	T	T
		C	3	T	T	T	T	T	T	T	T	T	T	T
		C	4	T	T	T	T	T	T	T	T	T	T	T
		B-C	6	5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T
		B-C	8		5.5	5.5	5.5	5.5	5.5	T	T	T	T	T
		B-C	10			3	3	3	4.5	7.5	8.5	T	T	T
		B-C	13				3	3	4.5	7.5	7.5	T	T	T
		B-C	16					3	4.5	5	7.5	T	T	T
		B-C	20						3	5	6	T	T	T
		B-C	25							5	6	T	T	T
		B-C	32								6	7.5	T	T
		B-C	40									7.5	T	T
		B-C	50										7.5	T
		B-C	63											T






Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T1 - S250 @ 400V

		Supply s.	T1										
		Version	B,C,N										
		Release	TM										
		I_u [A]	160										
Load s.	I_{cu} [kA]	Char.	I_n [A]	16	20	25	32	40	50	63	80	100	125	160
S250	10	K	<=2	T	T	T	T	T	T	T	T	T	T	T
		K	3	T	T	T	T	T	T	T	T	T	T	T
		K	4	T	T	T	T	T	T	T	T	T	T	T
		K	6	5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T
		K	8		5.5	5.5	5.5	5.5	5.5	T	T	T	T	T
		K	10			3	3	3	3	6	8.5	T	T	T
		K	16					3	3	4.5	7.5	T	T	T
		K	20						3	3.5	5.5	6.5	T	T
		K	25							3.5	5.5	6	9.5	T
		K	32								4.5	6	9.5	T
		K	40									5	8	T
		K	50										6	9.5
		K	63											9.5

Tmax T1 - S260 @ 400V

		Supply s.	T1										
		Version	B,C,N										
		Release	TM										
		I_u [A]	160										
Load s.	I_{cu} [kA]	Char.	I_n [A]	16	20	25	32	40	50	63	80	100	125	160
S260	10	C	<=2	T	T	T	T	T	T	T	T	T	T	T
		C	3	T	T	T	T	T	T	T	T	T	T	T
		C	4	T	T	T	T	T	T	T	T	T	T	T
		B-C	6	5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T
		B-C	8		5.5	5.5	5.5	5.5	5.5	T	T	T	T	T
		B-C	10			3	3	3	4.5	7.5	8.5	T	T	T
		B-C	13				3	3	4.5	7.5	7.5	T	T	T
		B-C	16					3	4.5	5	7.5	T	T	T
		B-C	20						3	5	6	T	T	T
		B-C	25							5	6	T	T	T
		B-C	32								6	7.5	T	T
		B-C	40									7.5	T	T
		B-C	50										7.5	T
		B-C	63											T




Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

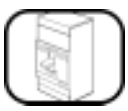
Tmax T1 - S270 @ 400V

			Supply s.	T1										
			Version	B,C,N										
			Release	TM										
			I_u [A]	160										
Load s.	I_{cu} [kA]	Char.	I_n [A]	16	20	25	32	40	50	63	80	100	125	160
S270	15	C	<=2	T	T	T	T	T	T	T	T	T	T	T
		C	3	T	T	T	T	T	T	T	T	T	T	T
		C	4	T	T	T	T	T	T	T	T	T	T	T
		B-C	6	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T
		B-C	8		5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T
		B-C	10			3	3	3	4.5	7.5	8.5	T	T	T
		B-C	13				3	3	4.5	7.5	7.5	12	T	T
		B-C	16					3	4.5	5	7.5	12	T	T
		B-C	20						3	5	6	10	T	T
		B-C	25							5	6	10	T	T
		B-C	32								6	7.5	12	T
		B-C	40									7.5	12	T
		B-C	50										7.5	10.5
		B-C	63											10.5

Tmax T1 - S270 @ 400V

			Supply s.	T1										
			Version	B,C,N										
			Release	TM										
			I_u [A]	160										
Load s.	I_{cu} [kA]	Char.	I_n [A]	16	20	25	32	40	50	63	80	100	125	160
S270	15	D	<=2	T	T	T	T	T	T	T	T	T	T	T
		D	3	T	T	T	T	T	T	T	T	T	T	T
		D	4	T	T	T	T	T	T	T	T	T	T	T
		D	6	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T
		D	8		5.5	5.5	5.5	5.5	5.5	10.5	12	T	T	T
		D	10			3	3	3	3	5	8.5	T	T	T
		D	16					2	2	3	5	8	13.5	T
		D	20						2	3	4.5	6.5	11	T
		D	25							2.5	4	6	9.5	T
		D	32								4	6	9.5	T
		D	40									5	8	T
		D	50										5	9.5
		D	63											9.5






Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T1 - S270 @ 400V

			Supply s.	T1										
			Version	B,C,N										
			Release	TM										
			I_u [A]	160										
Load s.	I_{cu} [kA]	Char.	I_n [A]	16	20	25	32	40	50	63	80	100	125	160
S270	10	Z	<=2	T	T	T	T	T	T	T	T	T	T	T
		Z	3	T	T	T	T	T	T	T	T	T	T	T
		Z	4	T	T	T	T	T	T	T	T	T	T	T
		Z	6	5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T
		Z	8		5.5	5.5	5.5	5.5	5.5	T	T	T	T	T
		Z	10			3	3	3	4.5	8	8.5	T	T	T
		Z	16					3	4.5	5	7.5	T	T	T
		Z	20						3	5	6	T	T	T
		Z	25							5	6	T	T	T
		Z	32								6	7.5	T	T
		Z	40									7.5	T	T
		Z	50										7.5	T
		Z	63											T

Tmax T1 - S280 @ 400V

			Supply s.	T1										
			Version	B,C,N										
			Release	TM										
			I_u [A]	160										
Load s.	I_{cu} [kA]	Char.	I_n [A]	16	20	25	32	40	50	63	80	100	125	160
S280	15	B-C	6	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T
	25	B-C	10			3	3	3	4.5	7.5	8.5	17*	T	T
		B-C	13				3	3	4.5	7.5	7.5	12	20*	T
		B-C	16					3	4.5	5	7.5	12	20*	T
		B-C	20						3	5	6	10	15	T
		B-C	25							5	6	10	15	T
	20	B-C	32								6	7.5	12	T
		B-C	40									7.5	12	T
	15	B-C	50										7.5	10.5
		B-C	63											10.5

* Choose the lowest value among those indicated and the rated ultimate short-circuit current of the supply side circuit-breaker.




Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T1 - S280 @ 400V

			Supply s.	T1										
			Version	B,C,N										
			Release	TM										
			I_u [A]	160										
Load s.	I_{cu} [kA]	Char.	I_n [A]	16	20	25	32	40	50	63	80	100	125	160
S280	15	D	6	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T
	25	D	10			3	3	3	3	5	8.5	17*	T	T
		D	16					2	2	3	5	8	13.5	T
		D	20						2	3	4.5	6.5	11	T
		D	25							2.5	4	6	9.5	T
	20	D	32								4	6	9.5	T
		D	40									5	8	T
	15	D	50										5	9.5
		D	63											9.5

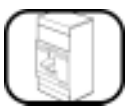
* Choose the lowest value among those indicated and the rated ultimate short-circuit current of the supply side circuit-breaker.

Tmax T1 - S280 @ 400V

			Supply s.	T1										
			Version	B,C,N										
			Release	TM										
			I_u [A]	160										
Load s.	I_{cu} [kA]	Char.	I_n [A]	16	20	25	32	40	50	63	80	100	125	160
S280	15	K	6	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T
	25	K	10			3	3	3	3	6	8.5	17*	T	T
		K	13					3	3	5	7.5	10	13.5	T
		K	16					3	3	4.5	7.5	10	13.5	T
		K	20						3	3.5	5.5	6.5	11	T
		K	25							3.5	5.5	6	9.5	T
	20	K	32								4.5	6	9.5	T
		K	40									5	8	T
	15	K	50										6	9.5
		K	63											9.5

* Choose the lowest value among those indicated and the rated ultimate short-circuit current of the supply side circuit-breaker.






Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T1 - S280 @ 400V

		Supply s.	T1										
		Version	B,C,N										
		Release	TM										
		I_u [A]	160										
Load s.	I_{cu} [kA]	Char.	I_n [A]	16	20	25	32	40	50	63	80	100	125	160
S280	∞	Z	<=2	T	T	T	T	T	T	T	T	T	T	T
	15	Z	3	T	T	T	T	T	T	T	T	T	T	T
		Z	4	T	T	T	T	T	T	T	T	T	T	T
		Z	6	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T
	25	Z	10			3	3	3	4.5	8	8.5	17*	T	T
		Z	13					3	4.5	7.5	7.5	12	20*	T
		Z	16					3	4.5	5	7.5	12	20*	T
		Z	20						3	5	6	10	15	T
		Z	25							5	6	10	15	T
	20	Z	32								6	7.5	12	T
		Z	40									7.5	12	T
	15	Z	50										7.5	10.5
		Z	63											10.5

* Choose the lowest value among those indicated and the rated ultimate short-circuit current of the supply side circuit-breaker.

Tmax T1 - S500 @ 400V

		Supply s.	T1										
		Version	B,C,N										
		Release	TM										
		I_u [A]	160										
Load s.	I_{cu} [kA]	Char.	I_n [A]	16	20	25	32	40	50	63	80	100	125	160
S500	50	B-C-D	6	5.5	5.5	5.5	5.5	5.5	5.5	10.5	15	20*	25*	T
		B-C-D	10			4.5	4.5	4.5	4.5	8	10	20*	25*	T
		B-C-D	13				4.5	4.5	4.5	7.5	10	15	25*	T
		B-C-D	16					4.5	4.5	7.5	10	15	25*	T
		B-C-D	20						4.5	7.5	10	15	25*	T
		B-C-D	25							6	10	15	20*	T
		B-C-D	32								7.5	10	20*	T
		B-C-D	40									10	20*	T
		B-C-D	50										15	T
		B-C-D	63											T

* Choose the lowest value among those indicated and the rated ultimate short-circuit current of the supply side circuit-breaker.




Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T1 - S500 @ 400V

			Supply s.	T1										
			Version	B,C,N										
			Release	TM										
			I_u [A]	160										
Load s.	I_{cu} [kA]	Char.	I_n [A]	16	20	25	32	40	50	63	80	100	125	160
S500	50	K	<=5.8	36	36	T	T	T	T	T	T	T	T	T
		K	5.3..8	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T
		K	7.3..11			4.5	4.5	4.5	4.5	8	T	T	T	T
	30	K	10..15				4.5	4.5	4.5	7.5	10	15	T	T
		K	14..20					4.5	4.5	7.5	10	15	T	T
		K	18..26						4.5	7.5	10	15	T	T
		K	23..32							6	10	15	20*	T
		K	29..37								7.5	10	20*	T
		K	34..41									10	20*	T
		K	38..45										15	T

* Choose the lowest value among those indicated and the rated ultimate short-circuit current of the supply side circuit-breaker.




Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T2 - S240 @ 400V

			Supply s.	T2																
			Version	N,S,H,L																
			Release	TM,M												EL				
			I_u [A]	160																
Load s.	I_{cu} [kA]	Char.	I_n [A]	12.5	16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160
S240	7.5	C	6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T		T	T	T	T
		C	8			5.5	5.5	5.5	5.5	5.5	T	T	T	T	T		T	T	T	T
		C	10			3*	3	3	3	4.5	T	T	T	T	T		T	T	T	T
		C	13			3*		3	3	4.5	T	T	T	T	T		T	T	T	T
		C	16					3*	3	4.5	5	T	T	T	T			T	T	T
		C	20					3*		3	5	6	T	T	T			T	T	T
		C	25							3*	5	6	T	T	T			T	T	T
		C	32							3*		6	T	T	T			T	T	T
		C	40									5.5*	T	T	T				T	T

* Value for the supply side magnetic only circuit-breaker.

Tmax T2 - S250 @ 400V

			Supply s.	T2																
			Version	N,S,H,L																
			Release	TM,M												EL				
			I_u [A]	160																
Load s.	I_{cu} [kA]	Char.	I_n [A]	12.5	16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160
S250	10	C	<=2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		C	3	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		C	4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		B-C	6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T		T	T	T	T
		B-C	8			5.5	5.5	5.5	5.5	5.5	T	T	T	T	T		T	T	T	T
		B-C	10			3*	3	3	3	4.5	7.5	8.5	T	T	T		T	T	T	T
		B-C	13			3*		3	3	4.5	7.5	7.5	T	T	T		T	T	T	T
		B-C	16					3*	3	4.5	5	7.5	T	T	T			T	T	T
		B-C	20					3*		3	5	6	T	T	T			T	T	T
		B-C	25							3*	5	6	T	T	T			T	T	T
		B-C	32							3*		6	7.5	T	T			T	T	T
		B-C	40									5.5*	7.5	T	T				T	T
		B-C	50									3*	5*	7.5	T				T	T
		B-C	63										5*		T					T

* Value for the supply side magnetic only circuit-breaker.




Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T2 - S250 @ 400V

		Supply s.	T2																
		Version	N,S,H,L																
		Release	TM,M												EL				
		I_u [A]	160																
Load s.	I_{cu} [kA]	Char.	I_n [A]	12.5	16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160
S250	10	K	<=2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		K	3	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		K	4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		K	6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T		T	T	T	T
		K	8			5.5	5.5	5.5	5.5	5.5	T	T	T	T	T		T	T	T	T
		K	10			3*	3	3	3	3	6	8.5	T	T	T		T	T	T	T
		K	16					2*	3	3	4.5	7.5	T	T	T			T	T	T
		K	20					2*		3	3.5	5.5	6.5	T	T			T	T	T
		K	25							2*	3.5	5.5	6	9.5	T			T	T	T
		K	32									4.5	6	9.5	T			T	T	T
		K	40									3*	5	8	T				T	T
		K	50									2*	3*	6	9.5				9.5	9.5
		K	63										3*		9.5					9.5

* Value for the supply side magnetic only circuit-breaker.

Tmax T2 - S260 @ 400V

		Supply s.	T2																
		Version	N,S,H,L																
		Release	TM,M												EL				
		I_u [A]	160																
Load s.	I_{cu} [kA]	Char.	I_n [A]	12.5	16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160
S260	10	C	<=2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		C	3	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		C	4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		B-C	6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T		T	T	T	T
		B-C	8			5.5	5.5	5.5	5.5	5.5	T	T	T	T	T		T	T	T	T
		B-C	10			3*	3	3	3	4.5	7.5	8.5	T	T	T		T	T	T	T
		B-C	13			3*		3	3	4.5	7.5	7.5	T	T	T		T	T	T	T
		B-C	16					3*	3	4.5	5	7.5	T	T	T			T	T	T
		B-C	20					3*		3	5	6	T	T	T			T	T	T
		B-C	25							3*	5	6	T	T	T			T	T	T
		B-C	32							3*		6	7.5	T	T			T	T	T
		B-C	40									5.5*	7.5	T	T				T	T
		B-C	50									3*	5*	7.5	T				T	T
		B-C	63										5*		T					T

* Value for the supply side magnetic only circuit-breaker.




Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T2 - S270 @ 400V

		Supply s.	T2																
		Version	N,S,H,L																
		Release	TM,M												EL				
		I_u [A]	160																
Load s.	I_{cu} [kA]	Char.	I_n [A]	12.5	16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160
S270	15	C	<=2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		C	3	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		C	4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		B-C	6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T		T	T	T	T
		B-C	8			5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T		T	T	T	T
		B-C	10			3*	3	3	3	4.5	7.5	8.5	T	T	T		T	T	T	T
		B-C	13			3*		3	3	4.5	7.5	7.5	12	T	T		T	T	T	T
		B-C	16					3*	3	4.5	5	7.5	12	T	T			T	T	T
		B-C	20					3*		3	5	6	10	T	T			T	T	T
		B-C	25							3*	5	6	10	T	T			T	T	T
		B-C	32							3*		6	7.5	12	T			T	T	T
		B-C	40									5.5*	7.5	12	T				T	T
		B-C	50									3*	5*	7.5	10.5				10.5	10.5
		B-C	63										5*		10.5					10.5

* Value for the supply side magnetic only circuit-breaker.

Tmax T2 - S270 @ 400V

		Supply s.	T2																
		Version	N,S,H,L																
		Release	TM,M												EL				
		I_u [A]	160																
Load s.	I_{cu} [kA]	Char.	I_n [A]	12.5	16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160
S270	15	D	<=2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		D	3	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		D	4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		D	6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T		T	T	T	T
		D	8			5.5	5.5	5.5	5.5	5.5	10.5	12	T	T	T		T	T	T	T
		D	10			3*	3	3	3	3	5	8.5	T	T	T		T	T	T	T
		D	16					2*	2	2	3	5	8	13.5	T			T	T	T
		D	20					2*		2	3	4.5	6.5	11	T			T	T	T
		D	25							2*	2.5	4	6	9.5	T			T	T	T
		D	32									4	6	9.5	T			T	T	T
		D	40									3*	5	8	T				T	T
		D	50									2*	3*	5	9.5				9.5	9.5
		D	63										3*		9.5					9.5

* Value for the supply side magnetic only circuit-breaker.




Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T2 - S270 @ 400V

			Supply s.	T2																
			Version	N,S,H,L																
			Release	TM,M												EL				
			I_u [A]	160																
Load s.	I_{cu} [kA]	Char.	I_n [A]	12.5	16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160
S270	10	Z	<=2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		Z	3	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		Z	4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		Z	6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T		T	T	T	T
		Z	8			5.5	5.5	5.5	5.5	5.5	T	T	T	T	T		T	T	T	T
		Z	10			3*	3	3	3	4.5	8	8.5	T	T	T		T	T	T	T
		Z	16					3*	3	4.5	5	7.5	T	T	T			T	T	T
		Z	20					3*		3	5	6	T	T	T			T	T	T
		Z	25							3*	5	6	T	T	T			T	T	T
		Z	32							3*		6	7.5	T	T			T	T	T
		Z	40									5.5*	7.5	T	T				T	T
		Z	50									4*	5*	7.5	T				T	T
		Z	63										5*		T					T

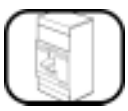
* Value for the supply side magnetic only circuit-breaker.

Tmax T2 - S280 @ 400V

			Supply s.	T2																
			Version	N,S,H,L																
			Release	TM,M												EL				
			I_u [A]	160																
Load s.	I_{cu} [kA]	Char.	I_n [A]	12.5	16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160
S280	15	B-C	6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T		T	T	T	T
	25	B-C	10			3*	3	3	3	4.5	7.5	8.5	17	T	T		T	T	T	T
		B-C	13			3*		3	3	4.5	7.5	7.5	12	20	T		T	T	T	T
		B-C	16					3*	3	4.5	5	7.5	12	20	T			T	T	T
		B-C	20					3*		3	5	6	10	15	T			T	T	T
		B-C	25							3*	5	6	10	15	T			T	T	T
	20	B-C	32							3*		6	7.5	12	T			T	T	T
		B-C	40									5.5*	7.5	12	T				T	T
	15	B-C	50									3*	5*	7.5	10.5				10.5	10.5
		B-C	63										5*		10.5					10.5

* Value for the supply side magnetic only circuit-breaker.






Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T2 - S280 @ 400V

		Supply s.	T2																
		Version	N,S,H,L																
		Release	TM,M												EL				
		I_u [A]	160																
Load s.	I_{cu} [kA]	Char.	I_n [A]	12.5	16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160
S280	15	D	6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T		T	T	T	T
	25	D	10			3*	3	3	3	3	5	8.5	17	T	T		T	T	T	T
		D	16					2*	2	2	3	5	8	13.5	T			T	T	T
		D	20					2*		2	3	4.5	6.5	11	T			T	T	T
		D	25							2*	2.5	4	6	9.5	T			T	T	T
	20	D	32									4	6	9.5	T			T	T	T
		D	40									3*	5	8	T				T	T
	15	D	50									2*	3*	5	9.5				9.5	9.5
		D	63										3*		9.5					9.5

* Value for the supply side magnetic only circuit-breaker.

Tmax T2 - S280 @ 400V

		Supply s.	T2																
		Version	N,S,H,L																
		Release	TM,M												EL				
		I_u [A]	160																
Load s.	I_{cu} [kA]	Char.	I_n [A]	12.5	16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160
S280	15	K	6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T		T	T	T	T
	25	K	10			3*	3	3	3	3	6	8.5	17	T	T		T	T	T	T
		K	13					2*	3	3	5	7.5	10	13.5	T		T	T	T	T
		K	16					2*	3	3	4.5	7.5	10	13.5	T			T	T	T
		K	20					2*		3	3.5	5.5	6.5	11	T			T	T	T
		K	25							2*	3.5	5.5	6	9.5	T			T	T	T
	20	K	32									4.5	6	9.5	T			T	T	T
		K	40									3*	5	8	T				T	T
	15	K	50									2*	3*	6	9.5				9.5	9.5
		K	63										3*		9.5					9.5

* Value for the supply side magnetic only circuit-breaker.




Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T2 - S280 @ 400V

			Supply s.	T2																
			Version	N,S,H,L																
			Release	TM,M												EL				
			I_u [A]	160																
Load s.	I_{cu} [kA]	Char.	I_n [A]	12.5	16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160
S280	∞	Z	<=2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	15	Z	3	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		Z	4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		Z	6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T		T	T	T	T
	25	Z	10			3*	3	3	3	4.5	8	8.5	17	T	T		T	T	T	T
		Z	13			3*		3	3	4.5	7.5	7.5	12	20	T		T	T	T	T
		Z	16					3*	3	4.5	5	7.5	12	20	T			T	T	T
		Z	20					3*		3	5	6	10	15	T			T	T	T
		Z	25							3*	5	6	10	15	T			T	T	T
	20	Z	32							3*		6	7.5	12	T			T	T	T
		Z	40									5.5*	7.5	12	T				T	T
	15	Z	50									4*	5*	7.5	10.5				10.5	10.5
		Z	63										5*		10.5					10.5

* Value for the supply side magnetic only circuit-breaker.

Tmax T2 - S290 @ 400V

			Supply s.	T2	
			Version	N,S,H,L	
			Release	TM,M	EL
			I_u [A]	160	
Load s.	I_{cu} [kA]	Char.	I_n [A]	160	160
S290	15	C-D-K	80		4
		C-D-K	100		4
		C	125		4




Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T2 - S500 @ 400V

		Supply s.	T2																
		Version	N,S,H,L																
		Release	TM,M												EL				
		I_u [A]	160																
Load s.	I_{cu} [kA]	Char.	I_n [A]	12.5	16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160
S500	50	B-C-D	6	4.5	5.5	5.5	5.5	5.5	5.5	5.5	10.5	15	20	25	36		36	36	36	36
		B-C-D	10			4.5*	4.5	4.5	4.5	4.5	8	10	20	25	36		36	36	36	36
		B-C-D	13			4.5*		4.5	4.5	4.5	7.5	10	15	25	36		36	36	36	36
		B-C-D	16					4.5*	4.5	4.5	7.5	10	15	25	36			36	36	36
		B-C-D	20					4.5*		4.5	7.5	10	15	25	36			36	36	36
		B-C-D	25							4.5*	6	10	15	20	36			36	36	36
		B-C-D	32							4.5*		7.5	10	20	36			36	36	36
		B-C-D	40									5*	10	20	36				36	36
		B-C-D	50									5*	7.5*	15	36				36	36
		B-C-D	63										5*		36					36

* Value for the supply side magnetic only circuit-breaker.

Tmax T2 - S500 @ 400V

		Supply s.	T2																
		Version	N,S,H,L																
		Release	TM,M												EL				
		I_u [A]	160																
Load s.	I_{cu} [kA]	Char.	I_n [A]	12.5	16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160
S500	50	K	<=5.8	36	36	36	36	36	36	36	36	36	36	36	50**	50**	50**	50**	50**	50**
		K	5.3..8	4.5*	5.5	5.5	5.5	5.5	5.5	5.5	10.5	36	36	36	50**		50**	50**	50**	50**
		K	7.3..11			4.5*	4.5	4.5	4.5	4.5	8	36	36	36	50**		50**	50**	50**	50**
	30	K	10..15			4.5*		4.5	4.5	4.5	7.5	10	15	T	T		T	T	T	T
		K	14..20					4.5*	4.5	4.5	7.5	10	15	T	T			T	T	T
		K	18..26					4.5*		4.5	7.5	10	15	T	T			T	T	T
		K	23..32							4.5*	6	10	15	20	T			T	T	T
		K	29..37							4.5*		7.5	10	20	T				T	T
		K	34..41									5*	10	20	T				T	T
		K	38..45									5*	7.5*	15	T				T	T

* Value for the supply side magnetic only circuit-breaker.
** Choose the lowest value among those indicated and the rated ultimate short-circuit current of the supply side circuit-breaker.




Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T3 - S240 @ 400V

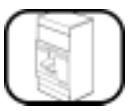
			Supply s.	T3						
			Version	N,S						
			Release	TM,M						
			I_u [A]	250						
Load s.	I_{cu} [kA]	Char.	I_n [A]	63	80	100	125	160	200	250
S240	7.5	C	6	T	T	T	T	T	T	T
		C	8	T	T	T	T	T	T	T
		C	10	T	T	T	T	T	T	T
		C	13	T	T	T	T	T	T	T
		C	16	5	T	T	T	T	T	T
		C	20	5	6	T	T	T	T	T
		C	25	5	6	T	T	T	T	T
		C	32		6	T	T	T	T	T
		C	40		4	T	T	T	T	T

Tmax T3 - S250 @ 400V

			Supply s.	T3						
			Version	N,S						
			Release	TM,M						
			I_u [A]	250						
Load s.	I_{cu} [kA]	Char.	I_n [A]	63	80	100	125	160	200	250
S250	10	C	<=2	T	T	T	T	T	T	T
		C	3	T	T	T	T	T	T	T
		C	4	T	T	T	T	T	T	T
		B-C	6	T	T	T	T	T	T	T
		B-C	8	T	T	T	T	T	T	T
		B-C	10	7.5	8.5	T	T	T	T	T
		B-C	13	7.5	7.5	T	T	T	T	T
		B-C	16	5	7.5	T	T	T	T	T
		B-C	20	5	6	T	T	T	T	T
		B-C	25	5	6	T	T	T	T	T
		B-C	32		6	7.5	T	T	T	T
		B-C	40			7.5	T	T	T	T
		B-C	50			5*	7.5	T	T	T
		B-C	63			5*	6*	T	T	T

* Value for the supply side magnetic only circuit-breaker.






Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T3 - S250 @ 400V

			Supply s.	T3						
			Version	N,S						
			Release	TM,M						
			I_u [A]	250						
Load s.	I_{cu} [kA]	Char.	I_n [A]	63	80	100	125	160	200	250
S250	10	K	<=2	T	T	T	T	T	T	T
		K	3	T	T	T	T	T	T	T
		K	4	T	T	T	T	T	T	T
		K	6	T	T	T	T	T	T	T
		K	8	T	T	T	T	T	T	T
		K	10	6	8.5	T	T	T	T	T
		K	16	4.5	7.5	T	T	T	T	T
		K	20	3.5	5.5	6.5	T	T	T	T
		K	25	3.5	5.5	6	9.5	T	T	T
		K	32		4.5	6	9.5	T	T	T
		K	40			5	8	T	T	T
		K	50			3*	6	9.5	T	T
		K	63			3*	5.5*	9.5	T	T

* Value for the supply side magnetic only circuit-breaker.

Tmax T3 - S260 @ 400V

			Supply s.	T3						
			Version	N,S						
			Release	TM,M						
			I_u [A]	250						
Load s.	I_{cu} [kA]	Char.	I_n [A]	63	80	100	125	160	200	250
S260	10	C	<=2	T	T	T	T	T	T	T
		C	3	T	T	T	T	T	T	T
		C	4	T	T	T	T	T	T	T
		B-C	6	T	T	T	T	T	T	T
		B-C	8	T	T	T	T	T	T	T
		B-C	10	7.5	8.5	T	T	T	T	T
		B-C	13	7.5	7.5	T	T	T	T	T
		B-C	16	5	7.5	T	T	T	T	T
		B-C	20	5	6	T	T	T	T	T
		B-C	25	5	6	T	T	T	T	T
		B-C	32		6	7.5	T	T	T	T
		B-C	40			7.5	T	T	T	T
		B-C	50			5*	7.5	T	T	T
		B-C	63			5*	6*	T	T	T

* Value for the supply side magnetic only circuit-breaker.




Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T3 - S270 @ 400V

			Supply s.	T3						
			Version	N,S						
			Release	TM,M						
			I_u [A]	250						
Load s.	I_{cu} [kA]	Char.	I_n [A]	63	80	100	125	160	200	250
S270	15	C	<=2	T	T	T	T	T	T	T
		C	3	T	T	T	T	T	T	T
		C	4	T	T	T	T	T	T	T
		B-C	6	10.5	T	T	T	T	T	T
		B-C	8	10.5	T	T	T	T	T	T
		B-C	10	7.5	8.5	T	T	T	T	T
		B-C	13	7.5	7.5	12	T	T	T	T
		B-C	16	5	7.5	12	T	T	T	T
		B-C	20	5	6	10	T	T	T	T
		B-C	25	5	6	10	T	T	T	T
		B-C	32		6	7.5	12	T	T	T
		B-C	40			7.5	12	T	T	T
		B-C	50			5*	7.5	10.5	T	T
		B-C	63			5*	6*	10.5	T	T

* Value for the supply side magnetic only circuit-breaker.

Tmax T3 - S270 @ 400V

			Supply s.	T3						
			Version	N,S						
			Release	TM,M						
			I_u [A]	250						
Load s.	I_{cu} [kA]	Char.	I_n [A]	63	80	100	125	160	200	250
S270	15	D	<=2	T	T	T	T	T	T	T
		D	3	T	T	T	T	T	T	T
		D	4	T	T	T	T	T	T	T
		D	6	10.5	T	T	T	T	T	T
		D	8	10.5	12	T	T	T	T	T
		D	10	5	8.5	T	T	T	T	T
		D	16	3	5	8	13.5	T	T	T
		D	20	3	4.5	6.5	11	T	T	T
		D	25	2.5	4	6	9.5	T	T	T
		D	32		4	6	9.5	T	T	T
		D	40			5	8	T	T	T
		D	50			3*	5	9.5	T	T
		D	63			3*	5*	9.5	T	T

* Value for the supply side magnetic only circuit-breaker.




Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T3 - S270 @ 400V

			Supply s.	T3						
			Version	N,S						
			Release	TM,M						
			I_u [A]	250						
Load s.	I_{cu} [kA]	Char.	I_n [A]	63	80	100	125	160	200	250
S270	10	Z	<=2	T	T	T	T	T	T	T
		Z	3	T	T	T	T	T	T	T
		Z	4	T	T	T	T	T	T	T
		Z	6	T	T	T	T	T	T	T
		Z	8	T	T	T	T	T	T	T
		Z	10	8	8.5	T	T	T	T	T
		Z	16	5	7.5	T	T	T	T	T
		Z	20	5	6	T	T	T	T	T
		Z	25	5	6	T	T	T	T	T
		Z	32		6	7.5	T	T	T	T
		Z	40			7.5	T	T	T	T
		Z	50			5*	7.5	T	T	T
		Z	63			5*	6*	T	T	T

* Value for the supply side magnetic only circuit-breaker.

Tmax T3 - S280 @ 400V

			Supply s.	T3						
			Version	N,S						
			Release	TM,M						
			I_u [A]	250						
Load s.	I_{cu} [kA]	Char.	I_n [A]	63	80	100	125	160	200	250
S280	15	B-C	6	10.5	T	T	T	T	T	T
	25	B-C	10	7.5	8.5	17	T	T	T	T
		B-C	13	7.5	7.5	12	20	T	T	T
		B-C	16	5	7.5	12	20	T	T	T
		B-C	20	5	6	8	13.5	T	T	T
		B-C	25	5	6	8	13.5	T	T	T
	20	B-C	32		6	7.5	12	T	T	T
		B-C	40			7.5	12	T	T	T
	15	B-C	50			5*	7.5	10.5	T	T
		B-C	63			5*	6*	10.5	T	T

* Value for the supply side magnetic only circuit-breaker.




Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T3 - S280 @ 400V

			Supply s.	T3						
			Version	N,S						
			Release	TM,M						
			I_u [A]	250						
Load s.	I_{cu} [kA]	Char.	I_n [A]	63	80	100	125	160	200	250
S280	15	D	6	10.5	T	T	T	T	T	T
	25	D	10	5	8.5	17	T	T	T	T
		D	16	3	5	8	13.5	T	T	T
		D	20	3	4.5	6.5	11	T	T	T
		D	25	2.5	4	6	9.5	T	T	T
	20	D	32		4	6	9.5	T	T	T
		D	40			5	8	T	T	T
	15	D	50			3*	5	9.5	T	T
		D	63			3*	5*	9.5	T	T

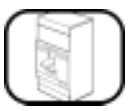
* Value for the supply side magnetic only circuit-breaker.

Tmax T3 - S280 @ 400V

			Supply s.	T3						
			Version	N,S						
			Release	TM,M						
			I_u [A]	250						
Load s.	I_{cu} [kA]	Char.	I_n [A]	63	80	100	125	160	200	250
S280	15	K	6	10.5	T	T	T	T	T	T
	25	K	10	6	8.5	17	T	T	T	T
		K	13	5	7.5	10	13.5	T	T	T
		K	16	4.5	7.5	10	13.5	T	T	T
		K	20	3.5	5.5	6.5	11	T	T	T
		K	25	3.5	5.5	6	9.5	T	T	T
	20	K	32		4.5	6	9.5	T	T	T
		K	40			5	8	T	T	T
	15	K	50			3*	6	9.5	T	T
		K	63			3*	5.5*	9.5	T	T

* Value for the supply side magnetic only circuit-breaker.






Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T3 - S280 @ 400V

			Supply s.	T3						
			Version	N,S						
			Release	TM,M						
			I_u [A]	250						
Load s.	I_{cu} [kA]	Char.	I_n [A]	63	80	100	125	160	200	250
S280	∞	Z	<=2	T	T	T	T	T	T	T
	15	Z	3	T	T	T	T	T	T	T
		Z	4	T	T	T	T	T	T	T
		Z	6	10.5	T	T	T	T	T	T
	25	Z	10	8	8.5	17	T	T	T	T
		Z	13	7.5	7.5	12	20	T	T	T
		Z	16	5	7.5	12	20	T	T	T
		Z	20	5	6	10	15	T	T	T
		Z	25	5	6	10	15	T	T	T
	20	Z	32		6	7.5	12	T	T	T
		Z	40			7.5	12	T	T	T
	15	Z	50			5*	7.5	10.5	T	T
		Z	63			5*	6*	10.5	T	T

* Value for the supply side magnetic only circuit-breaker.

Tmax T3 - S290 @ 400V

			Supply s.	T3		
			Version	N,S		
			Release	TM,M		
			I_u [A]	250		
Load s.	I_{cu} [kA]	Char.	I_n [A]	160	200	250
S290	15	C-D-K	80	4*	10	15
		C-D-K	100	4*	7.5*	15
		C	125		7.5*	

* Value for the supply side magnetic only circuit-breaker.




Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: MCB

Tmax T3 - S500 @ 400V

			Supply s.	T3						
			Version	N,S						
			Release	TM,M						
			I_u [A]	250						
Load s.	I_{cu} [kA]	Char.	I_n [A]	63	80	100	125	160	200	250
S500	50	B-C-D	6	10.5	15	20	25	36	36	36
		B-C-D	10	8	10	20	25	36	36	36
		B-C-D	13	7.5	10	15	25	36	36	36
		B-C-D	16	7.5	10	15	25	36	36	36
		B-C-D	20	7.5	10	15	25	36	36	36
		B-C-D	25	6	10	15	20	36	36	36
		B-C-D	32		7.5	10	20	36	36	36
		B-C-D	40			10	20	36	36	36
		B-C-D	50			7.5*	15	36	36	36
		B-C-D	63			5*	6*	36	36	36

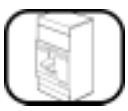
* Value for the supply side magnetic only circuit-breaker.

Tmax T3 - S500 @ 400V

			Supply s.	T3						
			Version	N,S						
			Release	TM,M						
			I_u [A]	250						
Load s.	I_{cu} [kA]	Char.	I_n [A]	63	80	100	125	160	200	250
S500	50	K	<=5.8	36	36	36	36	T	T	T
		K	5.3..8	10.5	36	36	36	T	T	T
		K	7.3..11	8	36	36	36	T	T	T
	30	K	10..15	7.5	10	15	T	T	T	T
		K	14..20	7.5	10	15	T	T	T	T
		K	18..26	7.5	10	15	T	T	T	T
		K	23..32	6	10	15	20	T	T	T
		K	29..37		7.5	10	20	T	T	T
		K	34..41			10	20	T	T	T
		K	38..45			7.5*	15	T	T	T

* Value for the supply side magnetic only circuit-breaker.






Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: Tmax

Tmax - Tmax @ 415V

				Supply s.	T1	T2					T3		
				Version	B,C,N	N,S,H,L					N,S		
				Release	TM	TM	EL				TM,M		
			I_u [A]		160	160					250		
Load s.	Version	Release		I_n [A]	160	160	25	63	100	160	160	200	250
T1	B,C,N	TM	160	16	3	3		3	3	3	3	4	5
				20	3	3		3	3	3	3	4	5
				25	3	3		3	3	3	3	4	5
				32	3	3			3	3	3	4	5
				40	3	3			3	3	3	4	5
				50	3	3			3	3	3	4	5
				63	3	3				3	3	4	5
				80						3		4	5
				100									5
				125									
				160									
T2	N,S,H,L	TM	160	1,6..5	T	T	T	T	T	T	T	T	T
				6,3..10	10	10	10	10	10	10	10	15	40
				12,5	3	3		3	3	3	3	4	5
				16	3	3		3	3	3	3	4	5
				20	3	3		3	3	3	3	4	5
				25	3	3		3	3	3	3	4	5
				32	3	3			3	3	3	4	5
				40	3	3			3	3	3	4	5
				50	3	3			3	3	3	4	5
				63	3	3				3	3	4	5
				80						3	3*	4	5
				100								4*	5
				125									
				160									
		EL	160	10..160								3	4
T3	N,S	TM	250	63							3	4	5
				80							3*	4	5
				100								4*	5
				125									
				160..250									

* Value for the supply side magnetic only circuit-breaker.




Discrimination

Supply side circuit-breaker: Tmax
Load side circuit-breaker: Isomax

Tmax - Isomax @ 415V

				Supply s.	T1	T2					T3		
				Version	B,C,N	N,S,H,L					N,S		
				Release	TM	TM	EL				TM,M		
			I_u [A]		160	160					250		
Load s.	Version	Release		I_n [A]	160	160	25	63	100	160	160	200	250
S1	B,N	TM	125	10	3	3	3	3	3	3	3	4	5
				12.5	3	3		3	3	3	3	4	5
				16	3	3		3	3	3	3	4	5
				20	3	3		3	3	3	3	4	5
				25	3	3		3	3	3	3	4	5
				32	3	3			3	3	3	4	5
				40	3	3			3	3	3	4	5
				50	3	3			3	3	3	4	5
				63	3	3				3	3	4	5
				80						3		4	5
				100									5
				125									
S2	B,N,S	TM	160	12.5	3	3		3	3	3	3	4	5
				16	3	3		3	3	3	3	4	5
				20	3	3		3	3	3	3	4	5
				25	3	3		3	3	3	3	4	5
				32	3	3			3	3	3	4	5
				40	3	3			3	3	3	4	5
				50	3	3			3	3	3	4	5
				63	3	3				3	3	4	5
				80						3	3*	4	5
				100								4*	5
				125									
				160									
S3	N,H,L	TM	250	32							3	4	5
				50							3	4	5
				80							3*	4	5
				100								4*	5
				125									
				160..250									

* Value for the supply side magnetic only circuit-breaker.




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: MCB

Isomax S3 - S240 @ 400V

		Supply s.	S3							
		Version	N,H,L							
		Release	TM,M							
		I_u [A]	160-250							
Load s.	I_{cu} [kA]	Char.	I_n [A]	32	50	80	100	125	160	200	250
S240	7.5	C	6	5.5	5.5	T	T	T	T	T	T
		C	8	5.5	5.5	T	T	T	T	T	T
		C	10	3	3	T	T	T	T	T	T
		C	13		3	T	T	T	T	T	T
		C	16		3	T	T	T	T	T	T
		C	20		2.5	5.5	T	T	T	T	T
		C	25			5.5	T	T	T	T	T
		C	32			4.5	7	T	T	T	T
		C	40				7	T	T	T	T

Isomax S3 - S250 @ 400V

		Supply s.	S3							
		Version	N,H,L							
		Release	TM,M							
		I_u [A]	160-250							
Load s.	I_{cu} [kA]	Char.	I_n [A]	32	50	80	100	125	160	200	250
S250	10	C	<=2	T	T	T	T	T	T	T	T
		C	3	T	T	T	T	T	T	T	T
		C	4	T	T	T	T	T	T	T	T
		B-C	6	5.5	5.5	T	T	T	T	T	T
		B-C	8	5.5	5.5	T	T	T	T	T	T
		B-C	10	3	3	8.5	T	T	T	T	T
		B-C	13		3	7.5	T	T	T	T	T
		B-C	16		3	7.5	T	T	T	T	T
		B-C	20		2.5	5.5	8	T	T	T	T
		B-C	25			5.5	8	T	T	T	T
		B-C	32			4.5	7	T	T	T	T
		B-C	40				7	T	T	T	T
		B-C	50					6	T	T	T
		B-C	63						T	T	T




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: MCB

Isomax S3 - S250 @ 400V

			Supply s.	S3							
			Version	N,H,L							
			Release	TM,M							
			I_u [A]	160-250							
Load s.	I_{cu} [kA]	Char.	I_n [A]	32	50	80	100	125	160	200	250
S250	10	K	<=2	T	T	T	T	T	T	T	T
		K	3	T	T	T	T	T	T	T	T
		K	4	T	T	T	T	T	T	T	T
		K	6	5.5	5.5	T	T	T	T	T	T
		K	8	5.5	5.5	T	T	T	T	T	T
		K	10		3	8.5	T	T	T	T	T
		K	16			5	8	T	T	T	T
		K	20			4.5	6.5	T	T	T	T
		K	25				6	9.5	T	T	T
		K	32					9.5	T	T	T
		K	40						T	T	T
		K	50							T	T
		K	63								T

Isomax S3 - S260 @ 400V

			Supply s.	S3							
			Version	N,H,L							
			Release	TM,M							
			I_u [A]	160-250							
Load s.	I_{cu} [kA]	Char.	I_n [A]	32	50	80	100	125	160	200	250
S260	10	C	<=2	T	T	T	T	T	T	T	T
		C	3	T	T	T	T	T	T	T	T
		C	4	T	T	T	T	T	T	T	T
		B-C	6	5.5	5.5	T	T	T	T	T	T
		B-C	8	5.5	5.5	T	T	T	T	T	T
		B-C	10	3	3	8.5	T	T	T	T	T
		B-C	13		3	7.5	T	T	T	T	T
		B-C	16		3	7.5	T	T	T	T	T
		B-C	20		2.5	5.5	8	T	T	T	T
		B-C	25			5.5	8	T	T	T	T
		B-C	32			4.5	7	T	T	T	T
		B-C	40				7	T	T	T	T
		B-C	50					6	T	T	T
		B-C	63						T	T	T




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: MCB

Isomax S3 - S270 @ 400V

			Supply s.	S3							
			Version	N,H,L							
			Release	TM,M							
			I_u [A]	160-250							
Load s.	I_{cu} [kA]	Char.	I_n [A]	32	50	80	100	125	160	200	250
S270	15	C	<=2	T	T	T	T	T	T	T	T
		C	3	T	T	T	T	T	T	T	T
		C	4	T	T	T	T	T	T	T	T
		B-C	6	5.5	5.5	T	T	T	T	T	T
		B-C	8	5.5	5.5	T	T	T	T	T	T
		B-C	10	3	3	8.5	T	T	T	T	T
		B-C	13		3	7.5	12	T	T	T	T
		B-C	16		3	7.5	12	T	T	T	T
		B-C	20		2.5	5.5	8	13.5	T	T	T
		B-C	25			5.5	8	13.5	T	T	T
		B-C	32			4.5	7	12	T	T	T
		B-C	40				7	12	T	T	T
		B-C	50					6	10.5	T	T
		B-C	63						10.5	T	T

Isomax S3 - S270 @ 400V

			Supply s.	S3							
			Version	N,H,L							
			Release	TM,M							
			I_u [A]	160-250							
Load s.	I_{cu} [kA]	Char.	I_n [A]	32	50	80	100	125	160	200	250
S270	15	D	<=2	T	T	T	T	T	T	T	T
		D	3	T	T	T	T	T	T	T	T
		D	4	T	T	T	T	T	T	T	T
		D	6	5.5	5.5	T	T	T	T	T	T
		D	8	5.5	5.5	T	T	T	T	T	T
		D	10	3	3	8.5	T	T	T	T	T
		D	16		2	5	8	13.5	T	T	T
		D	20		2	4.5	6.5	11	T	T	T
		D	25			4	6	9.5	T	T	T
		D	32			4	6	9.5	T	T	T
		D	40				5	8	T	T	T
		D	50						9.5	T	T
		D	63						9.5	T	T




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: MCB

Isomax S3 - S270 @ 400V

			Supply s.	S3							
			Version	N,H,L							
			Release	TM,M							
			I_u [A]	160-250							
Load s.	I_{cu} [kA]	Char.	I_n [A]	32	50	80	100	125	160	200	250
S270	10	Z	<=2	T	T	T	T	T	T	T	T
		Z	3	T	T	T	T	T	T	T	T
		Z	4	T	T	T	T	T	T	T	T
		Z	6	5.5	5.5	T	T	T	T	T	T
		Z	8	5.5	5.5	T	T	T	T	T	T
		Z	10	3	3	8.5	T	T	T	T	T
		Z	16		3	7.5	T	T	T	T	T
		Z	20		2.5	5.5	8	T	T	T	T
		Z	25		2.5*	5.5	8	T	T	T	T
		Z	32		2*	4.5	7	T	T	T	T
		Z	40			4.5*	7	T	T	T	T
		Z	50			3*	4.5*	6	T	T	T
		Z	63				4.5*	6*	T	T	T

* Value for the supply side magnetic only circuit-breaker.

Isomax S3 - S280 @ 400V

			Supply s.	S3							
			Version	N,H,L							
			Release	TM,M							
			I_u [A]	160-250							
Load s.	I_{cu} [kA]	Char.	I_n [A]	32	50	80	100	125	160	200	250
S280	15	B-C	6	5.5	5.5	T	T	T	T	T	T
	25	B-C	10	3	3	8.5	17	T	T	T	T
		B-C	13		3	7.5	12	20	T	T	T
		B-C	16		3	7.5	12	20	T	T	T
		B-C	20		2.5	5.5	8	13.5	T	T	T
		B-C	25			5.5	8	13.5	T	T	T
	20	B-C	32			4.5	7	12	T	T	T
		B-C	40				7	12	T	T	T
	15	B-C	50					6	10.5	T	T
		B-C	63						10.5	T	T




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: MCB

Isomax S3 - S280 @ 400V

			Supply s.	S3							
			Version	N,H,L							
			Release	TM,M							
			I_u [A]	160-250							
Load s.	I_{cu} [kA]	Char.	I_n [A]	32	50	80	100	125	160	200	250
S280	15	D	6	5.5	5.5	T	T	T	T	T	T
	25	D	10	3	3	8.5	17	T	T	T	T
		D	16		2	5	8	13.5	24.5	T	T
		D	20		2	4.5	6.5	11	22	T	T
		D	25			4	6	9.5	16.5	T	T
	20	D	32			4	6	9.5	16.5	T	T
		D	40				5	8	15	T	T
	15	D	50						9.5	T	T
		D	63						9.5	T	T

Isomax S3 - S280 @ 400V

			Supply s.	S3							
			Version	N,H,L							
			Release	TM,M							
			I_u [A]	160-250							
Load s.	I_{cu} [kA]	Char.	I_n [A]	32	50	80	100	125	160	200	250
S280	15	K	6	5.5	5.5	T	T	T	T	T	T
	25	K	10		3	8.5	17	T	T	T	T
		K	13		2	5	8	13.5	24.5	T	T
		K	16			5	8	13.5	24.5	T	T
		K	20			4.5	6.5	11	22	T	T
		K	25				6	9.5	16.5	T	T
	20	K	32					9.5	16.5	T	T
		K	40						15	T	T
	15	K	50							T	T
		K	63								T




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: MCB

Isomax S3 - S280 @ 400V

			Supply s.	S3							
			Version	N,H,L							
			Release	TM,M							
			I_u [A]	160-250							
Load s.	I_{cu} [kA]	Char.	I_n [A]	32	50	80	100	125	160	200	250
S280	∞	Z	<=2	T	T	T	T	T	T	T	T
	15	Z	3	T	T	T	T	T	T	T	T
		Z	4	T	T	T	T	T	T	T	T
		Z	6	5.5	5.5	T	T	T	T	T	T
	25	Z	10	3	3	8.5	17	T	T	T	T
		Z	13	3	3	7.5	12	20	T	T	T
		Z	16		3	7.5	12	20	T	T	T
		Z	20		2.5	5.5	8	13.5	T	T	T
		Z	25		2.5*	5.5	8	13.5	T	T	T
	20	Z	32		2*	4.5	7	12	T	T	T
		Z	40			4.5*	7	12	T	T	T
	15	Z	50			3*	4.5*	6	10.5	T	T
		Z	63				4.5*	6*	10.5	T	T

* Value for the supply side magnetic only circuit-breaker.

Isomax S3 - S290 @ 400V

			Supply s.	S3							
			Version	N,H,L							
			Release	TM,M							
			I_u [A]	160-250							
Load s.	I_{cu} [kA]	Char.	I_n [A]	32	50	80	100	125	160	200	250
S290	15	C-D-K	80							9.5	T
		C-D-K	100								14
		C	125								




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: MCB

Isomax S3 - S500 @ 400V

		Supply s.	S3							
		Version	N,H,L							
		Release	TM,M							
		I_u [A]	160-250							
Load s.	I_{cu} [kA]	Char.	I_n [A]	32	50	80	100	125	160	200	250
S500	50	B-C-D	6	4.5	4.5	10	15	35	35	35	35
		B-C-D	10	4.5	4.5	10	15	35	35	35	35
		B-C-D	13		4.5	10	15	35	35	35	35
		B-C-D	16		4.5	10	15	35	35	35	35
		B-C-D	20		4.5	7.5	15	35	35	35	35
		B-C-D	25			7.5	10	20	35	35	35
		B-C-D	32			6	10	20	35	35	35
		B-C-D	40				7.5	15	35	35	35
		B-C-D	50					10	35	35	35
		B-C-D	63						35	35	35

Isomax S3 - S500 @ 400V

		Supply s.	S3							
		Version	N,H,L							
		Release	TM,M							
		I_u [A]	160-250							
Load s.	I_{cu} [kA]	Char.	I_n [A]	32	50	80	100	125	160	200	250
S500	50	K	<=5.8	35	35	35	35	35	T	T	T
		K	5.3..8	4.5	4.5	35	35	35	T	T	T
		K	7.3..11		3	25	35	35	T	T	T
	30	K	10..15			10	15	30	T	T	T
		K	14..20			6	10	20	T	T	T
		K	18..26				7.5	15	T	T	T
		K	23..32					15	T	T	T
		K	29..37						20	T	T
		K	34..41						20	T	T
		K	38..45						20	T	T




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: MCB

Isomax S4 - S240 @ 400V

			Supply s.	S4		
			Version	N,H,L		
			Release	EL		
			I_u [A]	250		
Load s.	I_{cu} [kA]	Char.	I_n [A]	100	160	250
S240	7.5	C	6	T	T	T
		C	8	T	T	T
		C	10	T	T	T
		C	13	T	T	T
		C	16	T	T	T
		C	20	T	T	T
		C	25	T	T	T
		C	32	T	T	T
		C	40	T	T	T

Isomax S4 - S250 @ 400V

			Supply s.	S4		
			Version	N,H,L		
			Release	EL		
			I_u [A]	250		
Load s.	I_{cu} [kA]	Char.	I_n [A]	100	160	250
S250	10	C	<=2	T	T	T
		C	3	T	T	T
		C	4	T	T	T
		B-C	6	T	T	T
		B-C	8	T	T	T
		B-C	10	T	T	T
		B-C	13	T	T	T
		B-C	16	T	T	T
		B-C	20	T	T	T
		B-C	25	T	T	T
		B-C	32	T	T	T
		B-C	40	T	T	T
		B-C	50	T	T	T
		B-C	63	T	T	T




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: MCB

Isomax S4 - S250 @ 400V

			Supply s.	S4		
			Version	N,H,L		
			Release	EL		
			I_u [A]	250		
Load s.	I_{cu} [kA]	Char.	I_n [A]	100	160	250
S250	10	K	<=2	T	T	T
		K	3	T	T	T
		K	4	T	T	T
		K	6	T	T	T
		K	8	T	T	T
		K	10	T	T	T
		K	16	T	T	T
		K	20	T	T	T
		K	25	T	T	T
		K	32	T	T	T
		K	40	T	T	T
		K	50	T	T	T
		K	63	T	T	T

Isomax S4 - S260 @ 400V

			Supply s.	S4		
			Version	N,H,L		
			Release	EL		
			I_u [A]	250		
Load s.	I_{cu} [kA]	Char.	I_n [A]	100	160	250
S260	10	C	<=2	T	T	T
		C	3	T	T	T
		C	4	T	T	T
		B-C	6	T	T	T
		B-C	8	T	T	T
		B-C	10	T	T	T
		B-C	13	T	T	T
		B-C	16	T	T	T
		B-C	20	T	T	T
		B-C	25	T	T	T
		B-C	32	T	T	T
		B-C	40	T	T	T
		B-C	50	T	T	T
		B-C	63	T	T	T




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: MCB

Isomax S4 - S270 @ 400V

			Supply s.	S4		
			Version	N,H,L		
			Release	EL		
			I_u [A]	250		
Load s.	I_{cu} [kA]	Char.	I_n [A]	100	160	250
S270	15	C	<=2	T	T	T
		C	3	T	T	T
		C	4	T	T	T
		B-C	6	T	T	T
		B-C	8	T	T	T
		B-C	10	T	T	T
		B-C	13	T	T	T
		B-C	16	T	T	T
		B-C	20	T	T	T
		B-C	25	T	T	T
		B-C	32	T	T	T
		B-C	40	T	T	T
		B-C	50	T	T	T
		B-C	63	T	T	T

Isomax S4 - S270 @ 400V

			Supply s.	S4		
			Version	N,H,L		
			Release	EL		
			I_u [A]	250		
Load s.	I_{cu} [kA]	Char.	I_n [A]	100	160	250
S270	15	D	<=2	T	T	T
		D	3	T	T	T
		D	4	T	T	T
		D	6	T	T	T
		D	8	T	T	T
		D	10	T	T	T
		D	16	T	T	T
		D	20	T	T	T
		D	25	T	T	T
		D	32	T	T	T
		D	40	T	T	T
		D	50	T	T	T
		D	63	T	T	T




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: MCB

Isomax S4 - S270 @ 400V

			Supply s.	S4		
			Version	N,H,L		
			Release	EL		
			I_u [A]	250		
Load s.	I_{cu} [kA]	Char.	I_n [A]	100	160	250
S270	10	Z	<=2	T	T	T
		Z	3	T	T	T
		Z	4	T	T	T
		Z	6	T	T	T
		Z	8	T	T	T
		Z	10	T	T	T
		Z	16	T	T	T
		Z	20	T	T	T
		Z	25	T	T	T
		Z	32	T	T	T
		Z	40	T	T	T
		Z	50	T	T	T
		Z	63	T	T	T

Isomax S4 - S280 @ 400V

			Supply s.	S4		
			Version	N,H,L		
			Release	EL		
			I_u [A]	250		
Load s.	I_{cu} [kA]	Char.	I_n [A]	100	160	250
S280	15	B-C	6	T	T	T
	25	B-C	10	T	T	T
		B-C	13	T	T	T
		B-C	16	T	T	T
		B-C	20	T	T	T
		B-C	25	T	T	T
	20	B-C	32	T	T	T
		B-C	40	T	T	T
	15	B-C	50	T	T	T
		B-C	63	T	T	T




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: MCB

Isomax S4 - S280 @ 400V

			Supply s.	S4		
			Version	N,H,L		
			Release	EL		
			I_u [A]	250		
Load s.	I_{cu} [kA]	Char.	I_n [A]	100	160	250
S280	15	D	6	T	T	T
	25	D	10	T	T	T
		D	16	T	T	T
		D	20	T	T	T
		D	25	T	T	T
	20	D	32	T	T	T
		D	40	T	T	T
	15	D	50	T	T	T
		D	63	T	T	T

Isomax S4 - S280 @ 400V

			Supply s.	S4		
			Version	N,H,L		
			Release	EL		
			I_u [A]	250		
Load s.	I_{cu} [kA]	Char.	I_n [A]	100	160	250
S280	15	K	6	T	T	T
	25	K	10	T	T	T
		K	13	T	T	T
		K	16	T	T	T
		K	20	T	T	T
		K	25	T	T	T
	20	K	32	T	T	T
		K	40	T	T	T
	15	K	50	T	T	T
		K	63	T	T	T




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: MCB

Isomax S4 - S280 @ 400V

			Supply s.	S4		
			Version	N,H,L		
			Release	EL		
			I_u [A]	250		
Load s.	I_{cu} [kA]	Char.	I_n [A]	100	160	250
S280	∞	Z	<=2	T	T	T
	15	Z	3	T	T	T
		Z	4	T	T	T
		Z	6	T	T	T
	25	Z	10	T	T	T
		Z	13	T	T	T
		Z	16	T	T	T
		Z	20	T	T	T
		Z	25	T	T	T
	20	Z	32	T	T	T
		Z	40	T	T	T
	15	Z	50	T	T	T
		Z	63	T	T	T

Isomax S4 - S290 @ 400V

			Supply s.	S4		
			Version	N,H,L		
			Release	EL		
			I_u [A]	250		
Load s.	I_{cu} [kA]	Char.	I_n [A]	100	160	250
S290	15	C-D-K	80		14	T
		C-D-K	100		10.5	T
		C	125			T




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: MCB

Isomax S4 - S500 @ 400V

			Supply s.	S4		
			Version	N,H,L		
			Release	EL		
			I_u [A]	250		
Load s.	I_{cu} [kA]	Char.	I_n [A]	100	160	250
S500	50	B-C-D	6	40*	40*	40*
		B-C-D	10	40*	40*	40*
		B-C-D	13	40*	40*	40*
		B-C-D	16	40*	40*	40*
		B-C-D	20	40*	40*	40*
		B-C-D	25	40*	40*	40*
		B-C-D	32	40*	40*	40*
		B-C-D	40	40*	40*	40*
		B-C-D	50	40*	40*	40*
		B-C-D	63	40*	40*	40*

* Choose the lowest value among those indicated and the rated ultimate short-circuit current of the supply side circuit-breaker.

Isomax S4 - S500 @ 400V

			Supply s.	S4		
			Version	N,H,L		
			Release	EL		
			I_u [A]	250		
Load s.	I_{cu} [kA]	Char.	I_n [A]	100	160	250
S500	50	K	<=5.8	T	T	T
		K	5.3..8	T	T	T
		K	7.3..11	T	T	T
	30	K	10..15	T	T	T
		K	14..20	T	T	T
		K	18..26	T	T	T
		K	23..32	T	T	T
		K	29..37	T	T	T
		K	34..41	T	T	T
		K	38..45	T	T	T




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: Tmax

Isomax - Tmax @ 415V

				Circuit-breakers for distribution													
			Supply s.	S2/S3						S3		S4			S5		
			Version	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	N, H, L	N, H, L	N,H,L			N,H,L		
			Release	TM								EL			EL		
		I_u [A]		160						250		160		250	400		630
Load s.	Version	Release	I_n [A]	50	63	80	100	125	160	200	250	100	160	250	320	400	630
T1	B	TM	160	16					3	4	5	8	8	8	T	T	T
				20-25					3	4	5	8	8	8	T	T	T
				32					3	4	5	8	8	8	T	T	T
				40-63					3	4	5	8	8	8	T	T	T
				80					3*	4	5		7	7	T	T	T
				100					3*	4*	5		7	7	T	T	T
				125						4*	5*			7	T	T	T
				160							5*			7	T	T	T

* Value for the supply side magnetic only circuit-breaker.

Isomax - Tmax @ 415V

				Circuit-breakers for distribution													
			Supply s.	S2/S3						S3		S4			S5		
			Version	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	N, H, L	N, H, L	N,H,L			N,H,L		
			Release	TM,M								EL			EL		
		I_u [A]		160						250		160		250	400		630
Load s.	Version	Release	I_n [A]	50	63	80	100	125	160	200	250	100	160	250	320	400	630
T1	C	TM	160	25					3	4	5	8	8	8	T	T	T
				32					3	4	5	8	8	8	T	T	T
				40-63					3	4	5	8	8	8	T	T	T
				80					3*	4	5		7	7	T	T	T
				100					3*	4*	5		7	7	24	24	24
				125						4*	5*			7	24	24	24
				160							5*			7	24	24	24

* Value for the supply side magnetic only circuit-breaker.




	Current-limiting circuit-breakers																						
	S6		S7			S2				S3							S4			S6			
	N, S, H, L	N, S, H, L	S,H,L			X				X							X			X			
	EL		EL			TM				TM							EL			EL			
	630	800	1250		1600	100				125				125/200		200		250			400		630
	630	800	1000	1250	1600	50	63	80	100	32	50	80	100	125		160	200	100	160	250	320	400	630
	T	T	T	T	T											3	4	8	8	8	T	T	T
	T	T	T	T	T											3	4	8	8	8	T	T	T
	T	T	T	T	T											3	4	8	8	8	T	T	T
	T	T	T	T	T											3	4	8	8	8	T	T	T
	T	T	T	T	T											3*	4		7	7	T	T	T
	T	T	T	T	T											3*	4*		7	7	T	T	T
	T	T	T	T	T												4*			7	T	T	T
	T	T	T	T	T															7	T	T	T

	Current-limiting circuit-breakers																						
	S6		S7			S2				S3							S4			S6			
	N, S, H, L	N, S, H, L	S,H,L			X				X							X			X			
	EL		EL			TM				TM,M							EL			EL			
	630	800	1250		1600	100				125				125/200		200		250			400		630
	630	800	1000	1250	1600	50	63	80	100	32	50	80	100	125		160	200	100	160	250	320	400	630
	T	T	T	T	T											3	4	8	8	8	T	T	T
	T	T	T	T	T											3	4	8	8	8	T	T	T
	T	T	T	T	T											3	4	8	8	8	T	T	T
	T	T	T	T	T											3*	4		7	7	T	T	T
	T	T	T	T	T											3*	4*		7	7	T	T	T
	T	T	T	T	T												4*			7	T	T	T
	T	T	T	T	T															7	T	T	T

Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: Tmax

Isomax - Tmax @ 415V

				Circuit-breakers for distribution														
			Supply s.	S2/S3						S3		S4			S5			
			Version	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	N, H, L	N, H, L	N,H,L			N,H,L			
			Release	TM,M								EL			EL			
			I_u [A]	160						250		160		250	400		630	
Load s.	Version	Release	I_n [A]	50	63	80	100	125	160	200	250	100	160	250	320	400	630	
T1	N	TM	160	32					3	4	5	8	8	8	30	30	30	
				40-63					3	4	5	8	8	8	30	30	30	
				80					3*	4	5		7	7	30	30	30	
				100					3*	4*	5		7	7	24	24	24	
				125						4*	5*			7	24	24	24	
				160							5*			7	24	24	24	

* Value for the supply side magnetic only circuit-breaker.

Isomax - Tmax @ 415V

				Circuit-breakers for distribution														
			Supply s.	S2/S3						S3		S4			S5			
			Version	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	N, H, L	N, H, L	N,H,L			N,H,L			
			Release	TM,M								EL			EL			
			I_u [A]	160						250		160		250	400		630	
Load s.	Version	Release	I_n [A]	50	63	80	100	125	160	200	250	100	160	250	320	400	630	
T2	N	TM	160	1,6-2,5	T	T	T	T	T	T	T	T	T	T	T	T	T	T
				3,2	10	13	30**	T	T	T	T	T	T	T	T	T	T	T
				4-5	6	7	15	30**	T	T	T	T	T	T	T	T	T	T
				6,3	3	4	7	14	20**	T	T	T	T	T	T	T	T	T
				8		3	5	10	15	30**	T	T	T	T	T	T	T	T
				10			4	6	8	15	30	T	T	T	T	T	T	T
				12,5-16				3	3	6	10	20	T	T	T	T	T	T
				20				3	3	5	10	18	30	30	30	T	T	T
				25-32				3	3	5	10	18	25	25	25	T	T	T
				40-63				3	3	5	7	10	20	20	20	T	T	T
				80							3	5		9	9	T	T	T
				100							3*	5		9	9	T	T	T
				125							3*	5*			9	T	T	T
				160								5*			9	T	T	T
		EL	160	10..160							3	5	9	9	9	T	T	T

* Value for the supply side magnetic only circuit-breaker.
** Choose the lowest value among those indicated and the rated ultimate short-circuit current of the supply side circuit-breaker.




	Current-limiting circuit-breakers																						
	S6		S7			S2				S3							S4			S6		
	N, S, H, L	N, S, H, L	S,H,L			X				X							X			X		
	EL		EL			TM				TM,M							EL			EL		
	630	800	1250		1600	100				125				125/200	200		250			400		630
	630	800	1000	1250	1600	50	63	80	100	32	50	80	100	125	160	200	100	160	250	320	400	630
	T	T	T	T	T										3	4	8	8	8	T	T	T
	T	T	T	T	T										3	4	8	8	8	T	T	T
	T	T	T	T	T										3*	4		7	7	T	T	T
	T	T	T	T	T										3*	4*		7	7	T	T	T
	T	T	T	T	T											4*			7	T	T	T
	T	T	T	T	T														7	T	T	T

	Current-limiting circuit-breakers																						
	S6		S7			S2				S3							S4			S6		
	N, S, H, L	N, S, H, L	S,H,L			X				X							X			X		
	EL		EL			TM				TM,M							EL			EL		
	630	800	1250		1600	100				125				125/200	200		250			400		630
	630	800	1000	1250	1600	50	63	80	100	32	50	80	100	125	160	200	100	160	250	320	400	630
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	10	15	30	T	10	10	30	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	6	8	15	30	6	6	15	30	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	3	4	7	14	3	3	7	14	20	T	T	T	T	T	T	T	T
	T	T	T	T	T		3	5	10			5	10	15	35	T	T	T	T	T	T	T
	T	T	T	T	T			4	7			4	6	8	15	30	T	T	T	T	T	T
	T	T	T	T	T				3				3	3	8	10	T	T	T	T	T	T
	T	T	T	T	T				3				3	3	6	9	30	30	30	T	T	T
	T	T	T	T	T				3				3	3	5	8	25	25	25	T	T	T
	T	T	T	T	T				3				3	3	5	7	20	20	20	T	T	T
	T	T	T	T	T										3*	3		10	10	T	T	T
	T	T	T	T	T										3*	3*		10	10	T	T	T
	T	T	T	T	T											3*			10	T	T	T
	T	T	T	T	T														10	T	T	T
	T	T	T	T	T										3	3	10	10	10	T	T	T

Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: Tmax

Isomax - Tmax @ 415V

				Circuit-breakers for distribution													
			Supply s.	S2/S3						S3		S4			S5		
			Version	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	N, H, L	N, H, L	N,H,L			N,H,L		
			Release	TM,M								EL			EL		
		I_u [A]		160						250		160		250	400		630
Load s.	Version	Release		I_n [A]	50	63	80	100	125	160	200	250	100	160	250	320	400	630
T2	S	TM	160	1,6-2,5	T	T	T	T	T	T	T	T	T	T	T	T	T	T
				3,2	10	13	30**	T	T	T	T	T	T	T	T	T	T	T
				4-5	6	7	15	30**	T	T	T	T	T	T	T	T	T	T
				6,3	3	4	7	14	20**	T	T	T	T	T	T	T	T	T
				8		3	5	10	15	30**	T	T	T	T	T	T	T	T
				10			4	6	8	15	30	T	T	T	T	T	T	T
				12,5-16				3	3	6	10	20	40**	40**	40**	T	T	T
				20				3	3	5	10	18	30	30	30	T	T	T
				25-32				3	3	5	10	18	25	25	25	T	T	T
				40-63				3	3	5	7	10	20	20	20	T	T	T
				80							3	5		9	9	T	T	T
				100							3*	5		9	9	T	T	T
				125							3*	5*			9	T	T	T
				160								5*			9	T	T	T
		EL	160	10-160							3	5	9	9	9	T	T	T

* Value for the supply side magnetic only circuit-breaker.
** Choose the lowest value among those indicated and the rated ultimate short-circuit current of the supply side circuit-breaker.




						Current-limiting circuit-breakers																	
	S6		S7			S2				S3							S4			S6		
	N, S, H, L	N, S, H, L	S,H,L			X				X							X			X		
	EL		EL			TM				TM,M							EL			EL		
	630	800	1250		1600	100				125				125/200	200		250			400		630
	630	800	1000	1250	1600	50	63	80	100	32	50	80	100	125	160	200	100	160	250	320	400	630
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	10	15	30	T	10	10	30	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	6	8	15	30	6	6	15	30	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	3	4	7	14	3	3	7	14	20	T	T	T	T	T	T	T	T
	T	T	T	T	T		3	5	10			5	10	15	35	T	T	T	T	T	T	T
	T	T	T	T	T			4	7			4	6	8	15	30	T	T	T	T	T	T
	T	T	T	T	T				3				3	3	8	10	40	40	40	T	T	T
	T	T	T	T	T				3				3	3	6	9	30	30	30	T	T	T
	T	T	T	T	T				3				3	3	5	8	25	25	25	T	T	T
	T	T	T	T	T				3				3	3	5	7	20	20	20	T	T	T
	T	T	T	T	T										3*	3		10	10	T	T	T
	T	T	T	T	T										3*	3*		10	10	T	T	T
	T	T	T	T	T											3*			10	T	T	T
	T	T	T	T	T														10	T	T	T
	T	T	T	T	T										3	3	10	10	10	T	T	T

Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: Tmax

Isomax - Tmax @ 415V

					Circuit-breakers for distribution													
				Supply s.	S2/S3						S3		S4			S5		
				Version	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	N, H, L	N, H, L	N,H,L			N,H,L		
				Release	TM,M								EL			EL		
			I_u [A]		160						250		160		250	400		630
Load s.	Version	Release		I_n [A]	50	63	80	100	125	160	200	250	100	160	250	320	400	630
T2	H	TM	160	1,6-2,5	T	T	T	T	T	T	T	T	T	T	T	T	T	T
				3,2	10	13	30**	T	T	T	T	T	T	T	T	T	T	T
				4-5	6	7	15	30**	60**	T	T	T	T	T	T	T	T	T
				6,3	3	4	7	14	20**	T	T	T	T	T	T	T	T	T
				8		3	5	10	15	30**	60**	T	T	T	T	T	T	T
				10			4	6	8	15	30	50**	T	T	T	T	T	T
				12,5-16				3	3	6	10	20	40**	40**	40**	T	T	T
				20				3	3	5	10	18	30	30	30	T	T	T
				25-32				3	3	5	10	18	25	25	25	T	T	T
				40-63				3	3	5	7	10	20	20	20	T	T	T
				80							3	5		9	9	T	T	T
				100							3*	5		9	9	T	T	T
				125							3*	5*			9	T	T	T
				160								5*			9	T	T	T
		EL	160	10-160							3	5	9	9	9	T	T	T

* Value for the supply side magnetic only circuit-breaker.
** Choose the lowest value among those indicated and the rated ultimate short-circuit current of the supply side circuit-breaker.




						Current-limiting circuit-breakers																	
	S6		S7			S2				S3							S4			S6		
	N, S, H, L	N, S, H, L	S,H,L			X				X							X			X		
	EL		EL			TM				TM,M							EL			EL		
	630	800	1250		1600	100				125				125/200	200		250			400		630
	630	800	1000	1250	1600	50	63	80	100	32	50	80	100	125	160	200	100	160	250	320	400	630
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	10	15	30	T	10	10	30	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	6	8	15	30	6	6	15	30	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	3	4	7	14	3	3	7	14	20	60	T	T	T	T	T	T	T
	T	T	T	T	T		3	5	10			5	10	15	35	T	T	T	T	T	T	T
	T	T	T	T	T			4	7			4	6	8	15	30	T	T	T	T	T	T
	T	T	T	T	T				3				3	3	8	10	40	40	40	T	T	T
	T	T	T	T	T				3				3	3	6	9	30	30	30	T	T	T
	T	T	T	T	T				3				3	3	5	8	25	25	25	T	T	T
	T	T	T	T	T				3				3	3	5	7	20	20	20	T	T	T
	T	T	T	T	T										3*	3		10	10	T	T	T
	T	T	T	T	T										3*	3*		10	10	T	T	T
	T	T	T	T	T											3*			10	T	T	T
	T	T	T	T	T														10	T	T	T
	T	T	T	T	T										3	3	10	10	10	T	T	T

Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: Tmax

Isomax - Tmax @ 415V

					Circuit-breakers for distribution													
				Supply s.	S2/S3						S3		S4			S5		
				Version	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	N, H, L	N, H, L	N,H,L			N,H,L		
				Release	TM,M								EL			EL		
			I_u [A]		160						250		160		250	400		630
Load s.	Version	Release		I_n [A]	50	63	80	100	125	160	200	250	100	160	250	320	400	630
T2	L	TM	160	1,6-2,5	T	T	T	T	T	T	T	T	T	T	T	T	T	T
				3,2	10	13	30**	T	T	T	T	T	T	T	T	T	T	T
				4-5	6	7	15	30**	60**	T	T	T	T	T	T	T	T	T
				6,3	3	4	7	14	20**	T	T	T	T	T	T	T	T	T
				8		3	5	10	15	30**	60**	T	T	T	T	T	T	T
				10			4	6	8	15	30	50**	T	T	T	T	T	T
				12,5-16				3	3	6	10	20	40**	40**	40**	T	T	T
				20				3	3	5	10	18	30	30	30	T	T	T
				25-32				3	3	5	10	18	25	25	25	T	T	T
				40-63				3	3	5	7	10	20	20	20	T	T	T
				80							3	5		9	9	T	T	T
				100							3*	5		9	9	T	T	T
				125							3*	5*			9	T	T	T
				160								5*			9	T	T	T
		EL	160	10-160							3	5	9	9	9	T	T	T

* Value for the supply side magnetic only circuit-breaker.
** Choose the lowest value among those indicated and the rated ultimate short-circuit current of the supply side circuit-breaker.




	Current-limiting circuit-breakers																						
	S6		S7			S2				S3							S4			S6		
	N, S, H, L	N, S, H, L	S,H,L			X				X							X			X		
	EL		EL			TM				TM,M							EL			EL		
	630	800	1250		1600	100				125				125/200	200		250			400		630
	630	800	1000	1250	1600	50	63	80	100	32	50	80	100	125	160	200	100	160	250	320	400	630
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	10	15	30	T	10	10	30	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	6	8	15	30	6	6	15	30	70	T	T	T	T	T	T	T	T
	T	T	T	T	T	3	4	7	14	3	3	7	14	20	60	T	T	T	T	T	T	T
	T	T	T	T	T		3	5	10			5	10	15	35	70	T	T	T	T	T	T
	T	T	T	T	T			4	7			4	6	8	15	30	T	T	T	T	T	T
	T	T	T	T	T				3				3	3	8	10	40	40	40	T	T	T
	T	T	T	T	T				3				3	3	6	9	30	30	30	T	T	T
	T	T	T	T	T				3				3	3	5	8	25	25	25	T	T	T
	T	T	T	T	T				3				3	3	5	7	20	20	20	T	T	T
	T	T	T	T	T										3*	3		10	10	T	T	T
	T	T	T	T	T										3*	3*		10	10	T	T	T
	T	T	T	T	T											3*			10	T	T	T
	T	T	T	T	T														10	T	T	T
	T	T	T	T	T										3	3	10	10	10	T	T	T

Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: Tmax

Isomax - Tmax @ 415V

					Circuit-breakers for distribution													
				Supply s.	S2/S3						S3		S4			S5		
				Version	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	N, H, L	N, H, L	N,H,L			N,H,L		
				Release	TM,M								EL			EL		
			I_u [A]		160						250		160		250	400		630
Load s.	Version	Release		I_n [A]	50	63	80	100	125	160	200	250	100	160	250	320	400	630
T3	N	TM	250	63							3	4	5	5	5	12	12	12
				80							3	4		5	5	12	12	12
				100							3*	4		5	5	12	12	12
				125							3*	4*			5	12	12	12
				160								4*			5	10	10	10
				200												10	10	10
				250													10	10

* Value for the supply side magnetic only circuit-breaker.

Isomax - Tmax @ 415V

					Circuit-breakers for distribution													
				Supply s.	S2/S3						S3		S4			S5		
				Version	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	B, N, S, H, L	N, H, L	N, H, L	N,H,L			N,H,L		
				Release	TM,M								EL			EL		
			I_u [A]		160						250		160		250	400		630
Load s.	Version	Release		I_n [A]	50	63	80	100	125	160	200	250	100	160	250	320	400	630
T3	S	TM	250	63							3	4	5	5	5	12	12	12
				80							3	4		5	5	12	12	12
				100							3*	4		5	5	12	12	12
				125							3*	4*			5	12	12	12
				160								4*			5	10	10	10
				200												10	10	10
				250													10	10

* Value for the supply side magnetic only circuit-breaker.
** Choose the lowest value among those indicated and the rated ultimate short-circuit current of the supply side circuit-breaker.




	Current-limiting circuit-breakers																					
	S6		S7			S2				S3							S4			S6		
	N, S, H, L	N, S, H, L	S,H,L			X				X							X			X		
	EL		EL			TM				TM,M							EL			EL		
	630	800	1250		1600	100				125				125/200		200	250			400		630
	630	800	1000	1250	1600	50	63	80	100	32	50	80	100	125	160	200	100	160	250	320	400	630
	T	T	T	T	T											3	5	5	5	T	T	T
	T	T	T	T	T											3		5	5	T	T	T
	T	T	T	T	T											3*		5	5	T	T	T
	T	T	T	T	T											3*			5	T	T	T
	T	T	T	T	T														5	T	T	T
	30	T	T	T	T															32	32	32
	30	T	T	T	T																32	32

	Current-limiting circuit-breakers																					
	S6		S7			S2				S3							S4			S6		
	N, S, H, L	N, S, H, L	S,H,L			X				X							X			X		
	EL		EL			TM				TM,M							EL			EL		
	630	800	1250		1600	100				125				125/200		200	250			400		630
	630	800	1000	1250	1600	50	63	80	100	32	50	80	100	125	160	200	100	160	250	320	400	630
	T	T	T	T	T											3	5	5	5	T	T	T
	T	T	T	T	T											3		5	5	T	T	T
	40**	T	T	T	T											3*		5	5	42	42	42
	36**	T	T	T	T											3*			5	38	38	38
	36**	T	T	T	T														5	38	38	38
	30	T	T	T	T															32	32	32
	30	40**	T	T	T																32	32

Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: Isomax

Isomax - Isomax @ 415V

					Circuit-breakers for distribution												Current-limiting circuit-breakers					
				Supply s.	S4			S5			S6		S7				S4			S6		
				Version	N,H,L			N,H,L			N,S,H,L		S,H,L				X			X		
				Release	EL			EL			EL		EL				EL			EL		
			I_u [A]		160		250	400		630	630	800	1250		1600		250			400		630
Load s.	Version	Release		I_n [A]	100	160	250	320	400	630	630	800	1000	1250	1600	100	160	250	320	400	630
S3	N	TM	160 250	32	3	3	5	12	12	12	25	30	T	T	T	3	3	5	25	25	25
				50	3	3	5	12	12	12	25	30	T	T	T	3	3	5	25	25	25
				80		3	5	12	12	12	25	30	T	T	T		3	5	25	25	25
				100		3	5	12	12	12	25	30	T	T	T		3	5	25	25	25
				125			5	12	12	12	25	30	T	T	T			5	25	25	25
				160			5	12	12	12	25	30	T	T	T			5	25	25	25
				200				12	12	12	25	30	T	T	T				25	25	25
				250					12	12	25	30	T	T	T					25	25

Isomax - Isomax @ 415V

					Circuit-breakers for distribution												Current-limiting circuit-breakers					
				Supply s.	S4			S5			S6		S7				S4			S6		
				Version	N,H,L			N,H,L			N,S,H,L		S,H,L				X			X		
				Release	EL			EL			EL		EL				EL			EL		
			I_u [A]		160		250	400		630	630	800	1250		1600		250			400		630
Load s.	Version	Release		I_n [A]	100	160	250	320	400	630	630	800	1000	1250	1600	100	160	250	320	400	630
S3	H	TM	160 250	32	3	3	5	12	12	12	25	30	T	T	T	3	3	5	25	25	25
				50	3	3	5	12	12	12	25	30	T	T	T	3	3	5	25	25	25
				80		3	5	12	12	12	25	30	T	T	T		3	5	25	25	25
				100		3	5	12	12	12	25	30	T	T	T		3	5	25	25	25
				125			5	12	12	12	25	30	T	T	T			5	25	25	25
				160			5	12	12	12	25	30	T	T	T			5	25	25	25
				200				12	12	12	25	30	T	T	T				25	25	25
				250					12	12	25	30	T	T	T					25	25

Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: Isomax

Isomax - Isomax @ 415V

					Circuit-breakers for distribution												Current-limiting circuit-breakers					
				Supply s.	S4			S5			S6		S7				S4			S6		
				Version	N,H,L			N,H,L			N,S,H,L		S,H,L				X			X		
				Release	EL			EL			EL		EL				EL			EL		
			I_u [A]		160		250	400		630	630	800	1250		1600		250			400		630
Load s.	Version	Release		I_n [A]	100	160	250	320	400	630	630	800	1000	1250	1600	100	160	250	320	400	630
S3	L	TM	160 250	32	3	3	5	12	12	12	25	30	65*	65*	65*	3	3	5	25	25	25
				50	3	3	5	12	12	12	25	30	65*	65*	65*	3	3	5	25	25	25
				80		3	5	12	12	12	25	30	65*	65*	65*		3	5	25	25	25
				100		3	5	12	12	12	25	30	65*	65*	65*		3	5	25	25	25
				125			5	12	12	12	25	30	65*	65*	65*			5	25	25	25
				160			5	12	12	12	25	30	65*	65*	65*			5	25	25	25
				200				12	12	12	25	30	65*	65*	65*				25	25	25
				250					12	12	25	30	65*	65*	65*					25	25

* Choose the lowest value among those indicated and the rated ultimate short-circuit current of the supply side circuit-breaker.

Isomax - Isomax @ 415V

					Circuit-breakers for distribution												Current-limiting circuit-breakers					
				Supply s.	S4			S5			S6		S7				S4			S6		
				Version	N,H,L			N,H,L			N,S,H,L		S,H,L				X			X		
				Release	EL			EL			EL		EL				EL			EL		
			I_u [A]		160		250	400		630	630	800	1250		1600		250			400		630
Load s.	Version	Release		I_n [A]	100	160	250	320	400	630	630	800	1000	1250	1600	100	160	250	320	400	630
S4	N	EL	160 250	100				11	11	11	20	25	T	T	T				20	20	20
				160				11	11	11	20	25	T	T	T				20	20	20
				250					11	11	20	25	T	T	T					20	20

Isomax - Isomax @ 415V

					Circuit-breakers for distribution												Current-limiting circuit-breakers					
				Supply s.	S4			S5			S6		S7				S4			S6		
				Version	N,H,L			N,H,L			N,S,H,L		S,H,L				X			X		
				Release	EL			EL			EL		EL				EL			EL		
			I_u [A]		160		250	400		630	630	800	1250		1600		250			400		630
Load s.	Version	Release		I_n [A]	100	160	250	320	400	630	630	800	1000	1250	1600	100	160	250	320	400	630
S4	H	EL	160 250	100				11	11	11	20	25	50	50	50				20	20	20
				160				11	11	11	20	25	50	50	50				20	20	20
				250					11	11	20	25	50	50	50					20	20




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: Isomax

Isomax - Isomax @ 415V

				Circuit-breakers for distribution												Current-limiting circuit-breakers					
			Supply s.	S4			S5			S6		S7				S4			S6		
			Version	N,H,L			N,H,L			N,S,H,L		S,H,L				X			X		
			Release	EL			EL			EL		EL				EL			EL		
			I_u [A]	160		250	400		630	630	800	1250		1600		250			400		630
Load s.	Version	Release	I_n [A]	100	160	250	320	400	630	630	800	1000	1250	1600	100	160	250	320	400	630
S4	L	EL	160	100				11	11	11	20	25	50	50	50				20	20	20
			250	160				11	11	11	20	25	50	50	50				20	20	20
				250					11	11	20	25	50	50	50					20	20

Isomax - Isomax @ 415V

				Circuit-breakers for distribution												Current-limiting circuit-breakers					
			Supply s.	S4			S5			S6		S7				S4			S6		
			Version	N,H,L			N,H,L			N,S,H,L		S,H,L				X			X		
			Release	EL			EL			EL		EL				EL			EL		
			I_u [A]	160		250	400		630	630	800	1250		1600		250			400		630
Load s.	Version	Release	I_n [A]	100	160	250	320	400	630	630	800	1000	1250	1600	100	160	250	320	400	630
S5	N	EL	400	320						15	20	T	T	T						15
				400						15	20	T	T	T						15
			630	630								T	T	T						

Isomax - Isomax @ 415V

				Circuit-breakers for distribution												Current-limiting circuit-breakers					
			Supply s.	S4			S5			S6		S7				S4			S6		
			Version	N,H,L			N,H,L			N,S,H,L		S,H,L				X			X		
			Release	EL			EL			EL		EL				EL			EL		
			I_u [A]	160		250	400		630	630	800	1250		1600		250			400		630
Load s.	Version	Release	I_n [A]	100	160	250	320	400	630	630	800	1000	1250	1600	100	160	250	320	400	630
S5	H	EL	400	320						15	20	50	50	50						15
				400						15	20	50	50	50						15
			630	630								50	50	50						




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: Isomax

Isomax - Isomax @ 415V

					Circuit-breakers for distribution												Current-limiting circuit-breakers					
				Supply s.	S4			S5			S6		S7				S4			S6		
				Version	N,H,L			N,H,L			N,S,H,L		S,H,L				X			X		
				Release	EL			EL			EL		EL				EL			EL		
			I_u [A]		160		250	400		630	630	800	1250		1600		250			400		630
Load s.	Version	Release		I_n [A]	100	160	250	320	400	630	630	800	1000	1250	1600	100	160	250	320	400	630
S5	L	EL	400	320							15	20	50	50	50						15
				400							15	20	50	50	50						15
			630	630									50	50	50						

Isomax - Isomax @ 415V

					Circuit-breakers for distribution												Current-limiting circuit-breakers					
				Supply s.	S4			S5			S6		S7				S4			S6		
				Version	N,H,L			N,H,L			N,S,H,L		S,H,L				X			X		
				Release	EL			EL			EL		EL				EL			EL		
			I_u [A]		160		250	400		630	630	800	1250		1600		250			400		630
Load s.	Version	Release		I_n [A]	100	160	250	320	400	630	630	800	1000	1250	1600	100	160	250	320	400	630
S6	N	EL	630	630									T	T	T						
			800	800									T	T	T						

Isomax - Isomax @ 415V

					Circuit-breakers for distribution												Current-limiting circuit-breakers					
				Supply s.	S4			S5			S6		S7				S4			S6		
				Version	N,H,L			N,H,L			N,S,H,L		S,H,L				X			X		
				Release	EL			EL			EL		EL				EL			EL		
			I_u [A]		160		250	400		630	630	800	1250		1600		250			400		630
Load s.	Version	Release		I_n [A]	100	160	250	320	400	630	630	800	1000	1250	1600	100	160	250	320	400	630
S6	S	EL	630	630									40	40	40						
			800	800									40	40	40						

Isomax - Isomax @ 415V

					Circuit-breakers for distribution												Current-limiting circuit-breakers					
				Supply s.	S4			S5			S6		S7				S4			S6		
				Version	N,H,L			N,H,L			N,S,H,L		S,H,L				X			X		
				Release	EL			EL			EL		EL				EL			EL		
			I_u [A]		160		250	400		630	630	800	1250		1600		250			400		630
Load s.	Version	Release		I_n [A]	100	160	250	320	400	630	630	800	1000	1250	1600	100	160	250	320	400	630
S6	H	EL	630	630									40	40	40						
			800	800									40	40	40						




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: Isomax

Isomax - Isomax @ 415V

					Circuit-breakers for distribution												Current-limiting circuit-breakers					
				Supply s.	S4			S5			S6		S7				S4			S6		
				Version	N,H,L			N,H,L			N,S,H,L		S,H,L				X			X		
				Release	EL			EL			EL		EL				EL			EL		
			Iu [A]		160		250	400		630	630	800	1250		1600		250			400		630
Load s.	Version	Release		In [A]	100	160	250	320	400	630	630	800	1000	1250	1600	100	160	250	320	400	630
S6	L	EL	630	630									40	40	40						
			800	800									40	40	40						

Isomax - Isomax @ 415V

					Circuit-breakers for distribution												Current-limiting circuit-breakers					
				Supply s.	S4			S5			S6		S7				S4			S6		
				Version	N,H,L			N,H,L			N,S,H,L		S,H,L				X			X		
				Release	EL			EL			EL		EL				EL			EL		
			Iu [A]		160		250	400		630	630	800	1250		1600		250			400		630
Load s.	Version	Release		In [A]	100	160	250	320	400	630	630	800	1000	1250	1600	100	160	250	320	400	630
S3	X	TM	125	32	4	4	14	T	T	T	T	T	T	T	T	4	4	14	T	T	T
				50	4	4	14	T	T	T	T	T	T	T	T	4	4	14	T	T	T
				80		4	9	50*	50*	50*	T	T	T	T	T		4	9	T	T	T
				100		4	9	50*	50*	50*	T	T	T	T	T		4	9	T	T	T
			125 200	125			9	50*	50*	50*	T	T	T	T	T			9	T	T	T
			200	160				25	25	25	T	T	T	T	T				T	T	T
				200				25	25	25	T	T	T	T	T				T	T	T

* Choose the lowest value among those indicated and the rated ultimate short-circuit current of the supply side circuit-breaker.

Isomax - Isomax @ 415V

					Circuit-breakers for distribution												Current-limiting circuit-breakers					
				Supply s.	S4			S5			S6		S7				S4			S6		
				Version	N,H,L			N,H,L			N,S,H,L		S,H,L				X			X		
				Release	EL			EL			EL		EL				EL			EL		
			Iu [A]		160		250	400		630	630	800	1250		1600		250			400		630
Load s.	Version	Release		In [A]	100	160	250	320	400	630	630	800	1000	1250	1600	100	160	250	320	400	630
S4	X	EL	250	100				20	20	20	50*	50*	65*	65*	65*				50	50	50
				160				20	20	20	50*	50*	65*	65*	65*				50	50	50
				250					20	20	50*	50*	65*	65*	65*					50	50

* Choose the lowest value among those indicated and the rated ultimate short-circuit current of the supply side circuit-breaker.




Discrimination

Supply side circuit-breaker: Isomax
Load side circuit-breaker: Isomax

Isomax - Isomax @ 415V

					Circuit-breakers for distribution												Current-limiting circuit-breakers					
				Supply s.	S4			S5			S6		S7				S4			S6		
				Version	N,H,L			N,H,L			N,S,H,L		S,H,L				X			X		
				Release	EL			EL			EL		EL				EL			EL		
			I_u [A]		160		250	400		630	630	800	1250		1600		250			400		630
Load s.	Version	Release		I_n [A]	100	160	250	320	400	630	630	800	1000	1250	1600	100	160	250	320	400	630
S6	X	EL	400	320									45	45	65*						
				400									45	45	65*						
			630	630									45	45	65*						

* Choose the lowest value among those indicated and the rated ultimate short-circuit current of the supply side circuit-breaker.




Discrimination

Supply side circuit-breaker: Emax
Load side circuit-breaker: Tmax

Emax - Tmax @ 415V

			Supply s.	E1		E2			E3				E4		E6	
			Version	B	N	B	N	L*	N	S	H	L*	S	H	H	V
			Release	EL		EL			EL				EL		EL	
Load s.	Version	Release	I_u [A]	800 1250	800 1250	1600 2000	1250 1600 2000	1250 1600	2500 3200	1250 1600 2000 2500 3200	1250 1600 2000 2500 3200	2000 2500	4000	3200 4000	5000 6300	3200 4000 5000 6300
T1	B	TM	160	T	T	T	T	T	T	T	T	T	T	T	T	T
	C			T	T	T	T	T	T	T	T	T	T	T	T	T
	N			T	T	T	T	T	T	T	T	T	T	T	T	T
T2	N	TM, EL	160	T	T	T	T	T	T	T	T	T	T	T	T	T
	S			36	T	T	T	T	T	T	T	T	T	T	T	T
	H			36	T	T	55	T	T	T	T	T	T	T	T	T
	L			36	T	T	55	T	T	T	75	T	T	T	T	T
T3	N	TM	250	T	T	T	T	T	T	T	T	T	T	T	T	T
	S			36	T	T	T	T	T	T	T	T	T	T	T	T

* Emax air circuit-breakers with electronic releases PR112/P and PR113/P.




Discrimination

Supply side circuit-breaker: Emax
Load side circuit-breaker: Isomax

Emax - Isomax @ 415V

			Supply s.	E1		E2			E3				E4		E6	
			Versione	B	N	B	N	L*	N	S	H	L*	S	H	H	V
			Release	EL		EL			EL				EL		EL	
Load s.	Version	Release	I_u [A]	800 1250	800 1250	1600 2000	1250 1600 2000	1250 1600	2500 3200	1250 1600 2000 2500 3200	1250 1600 2000 2500 3200	2000 2500	4000	3200 4000	5000 6300	3200 4000 5000 6300
S3	N	TM	160 250	T	T	T	T	T	T	T	T	T	T	T	T	T
	H			36	T	T	55	T	T	T	T	T	T	T	T	T
	L			36	T	T	55	T	T	T	75	T	T	T	T	T
S4	N	EL	160 250	T	T	T	T	T	T	T	T	T	T	T	T	T
	H			36	T	T	55	T	T	T	T	T	T	T	T	T
	L			36	T	T	55	T	T	T	75	T	T	T	T	T
S5	N	EL	400 630	T	T	T	T	T	T	T	T	T	T	T	T	T
	H			36	T	T	55	T	T	T	T	T	T	T	T	T
	L			36	T	T	55	T	T	T	75	T	T	T	T	T
S6	N	EL	630 800	T	T	T	T	T	T	T	T	T	T	T	T	T
	S			36	T	T	T	T	T	T	T	T	T	T	T	T
	H			36	T	T	55	T	T	T	T	T	T	T	T	T
	L			36	T	T	55	T	T	T	75	T	T	T	T	T
S7	S	EL	1250 1600			T	T		T	T	T	42	T	T	T	T
	H					T	55		T	T	T	42	T	T	T	T
	L					T	55		T	T	75	42	T	T	T	T
S8	H	EL	2000/2500/3200						T	T	75		T	T	T	T
	V								T	T	75		T	T	T	100
S3	X	TM	125/200	36	T	T	55	100	T	T	75	100	T	T	T	100
S4	X	EL	250	36	T	T	55	100	T	T	75	100	T	T	T	100
S6	X	EL	400/630	36	T	T	55	100	T	T	75	100	T	T	T	100

* Emax air circuit-breakers with electronic releases PR112/P and PR113/P.




Due to possible developments of standards as well as of materials, the characteristics and dimensions specified in the present catalogue may only be considered binding after confirmation by ABB SACE.

1SDC007004D0201 en - May '02
Printed in Italy
Tipografia

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