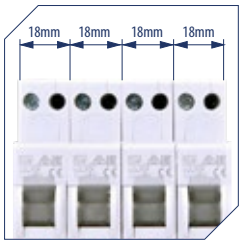
ASTI Residual Current Circuit Breakers with Integral Overcurrent Protection - RCBOs

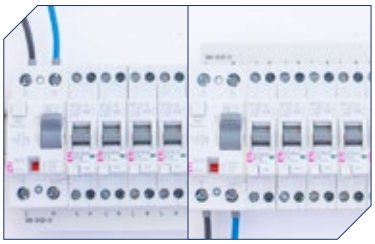
Residual current circuit breaker with integral overcurrent protection KZS -1M

By combining both the MCB (protection against overcurrent faults) and RCCB (protection against residual currents) functions, the RCBO provides enhanced safety and protection for both people and electrical systems. It is commonly used in residential, commercial and industrial electrical installations with operating temperature down to -35° C.

SPACE SAVING
Two devices (MCB and an RCCB) in a single 1-module unit, switching active and neutral pole.



EITHER WAY UP
New universal KZS - 1M UNI enables top and bottom, line and load compatibility for easy, fast either-way-up installations.



All necessary technical and installation information can be found on the front and side of the device

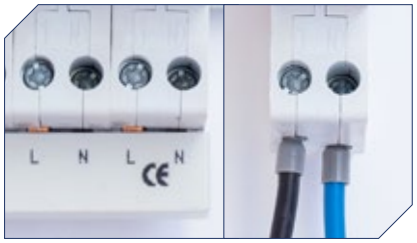
Added protection against any pulsating DC component that can be generated from electrical appliances

Line voltage-dependent differential tripping (minimum supply voltage 85V)

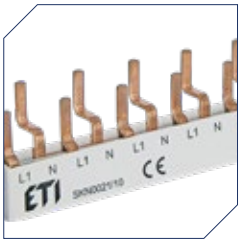
Energy limiting class 3: highest energy limiting performance for optimal protection of cable insulation and maximally reducing risk of fire and other damage

The middle (trip) position of the toggle indicates electric fault tripping

The terminals accept not only wires but also time saving busbars



The possibility of connecting to SKN-type busbars



Easy removal from existing busbar system

ASTI / Residual Current Circuit Creakers with Integral Overcurrent Protection

- Real contact position indication for easier identification, whether RCBO is in ON or OFF position

- Clearly marked terminals ensure appropriate connection
- Increased opening on the N pole (size PZ2 screw drive)

- Sealing possibility

Recommended for use in installations with high level of additional protection required (bathrooms, hospitals, kindergartens etc). Used for fault and additional protection.

Residual current circuit breaker with integral overcurrent protection KZS -1M UNI

Rated short-circuit capacity	Rated current	Tripping characteristic	Rated residual current
6 kA	**6 - 25 A**	**B, C**	**0,01 - 0,03 - 0,1 A**

Description - KZS -1M UNI is a residual current circuit breaker with integral overcurrent protection, functionally dependent on line voltage.
Bi-directional connection.

Technical data

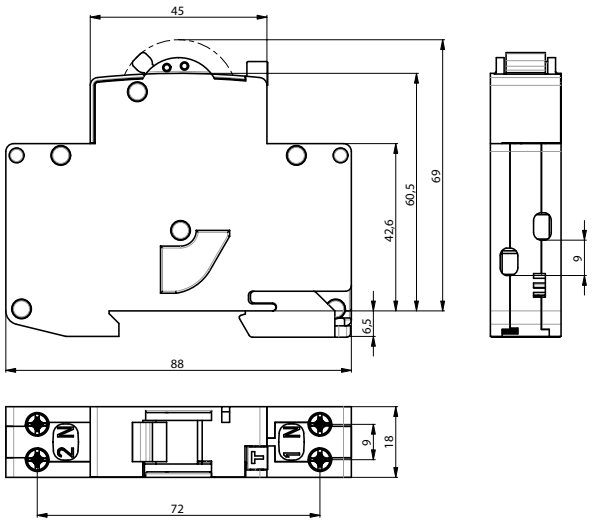
Type	KZS 1M UNI
Rated voltage U_n	230/240 V AC
Rated current I_n	6-25 A
Minimum supply voltage U_{min}	85 V
Rated frequency f_n	50/60 Hz
Rated short-circuit capacity	6.000 A
Back-up fuse	100 A gG
Tripping characteristic	B, C
Rated residual current $I_{\Delta n}$	10, 30, 100 mA
Type of residual release	A, AC
Rated residual making and breaking capacity $I_{\Delta m}$	1500A
Terminals	1-10 mm^2, max. 1,5Nm
Terminal screw	M4 (Pozidrive PZ2)
Width	18 mm
Mounting position	any
Standard	IEC 61009
Length of neutral conductor	-
Operating temperature	-35°C ... +40°C
Storage temperature	-40°C ... +60°C

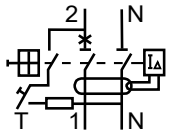
Conductor cross-section	Number of single conductors, rigid, single-wire CU conductor					
[mm²]	1	2	3	4	5	6
1,5	✓	✓	✓	✓	✓	✓
2,5	✓	✓	✓	✓	✓	×
4	✓	✓	✓	×	×	×
6	✓	✓	×	×	×	×
10	✓	×	×	×	×	×

Remark: When you use more than 2 cables you have to be careful how those cables are inserted to ensure proper pressure on each cable

Conductor cross-section	Number of single conductors, flexible Cu conductors with cable ferrule					
[mm²]	1	2	3	4	5	6
1,5	✓	✓	✓	×	×	×
2,5	✓	✓	×	×	×	×
4	✓	✓	×	×	×	×
6	✓	×	×	×	×	×
10	✓	×	×	×	×	×

Combination of rigid single-wire and flexible multi-wire Cu conductors is not allowed





KZS - 1M UNI

I_n [A]	$I_{\Delta n}$ [A]	Type A Characteristic B	Code No. B	Type A Characteristic C	Code No. C	g	
6	0,01	KZS-1M-UNI 1p+N A B6/0.01	002176001	KZS-1M-UNI 1p+N A C6/0.01	002176011	111	1/72
10		KZS-1M-UNI 1p+N A B10/0.01	002176002	KZS-1M-UNI 1p+N A C10/0.01	002176012		
13		KZS-1M-UNI 1p+N A B13/0.01	002176003	KZS-1M-UNI 1p+N A C13/0.01	002176013		
16		KZS-1M-UNI 1p+N A B16/0.01	002176004	KZS-1M-UNI 1p+N A C16/0.01	002176014		
20		KZS-1M-UNI 1p+N A B20/0.01	002176005	KZS-1M-UNI 1p+N A C20/0.01	002176015		
25		KZS-1M-UNI 1p+N A B25/0.01	002176006	KZS-1M-UNI 1p+N A C25/0.01	002176016		
6	0,03	KZS-1M-UNI 1p+N A B6/0.03	002176021	KZS-1M-UNI 1p+N A C6/0.03	002176031	111	1/72
10		KZS-1M-UNI 1p+N A B10/0.03	002176022	KZS-1M-UNI 1p+N A C10/0.03	002176032		
13		KZS-1M-UNI 1p+N A B13/0.03	002176023	KZS-1M-UNI 1p+N A C13/0.03	002176033		
16		KZS-1M-UNI 1p+N A B16/0.03	002176024	KZS-1M-UNI 1p+N A C16/0.03	002176034		
20		KZS-1M-UNI 1p+N A B20/0.03	002176025	KZS-1M-UNI 1p+N A C20/0.03	002176035		
25		KZS-1M-UNI 1p+N A B25/0.03	002176026	KZS-1M-UNI 1p+N A C25/0.03	002176036		
6	0,1	KZS-1M-UNI 1p+N A B6/0.1	002176041	KZS-1M-UNI 1p+N A C6/0.1	002176051	111	1/72
10		KZS-1M-UNI 1p+N A B10/0.1	002176042	KZS-1M-UNI 1p+N A C10/0.1	002176052		
13		KZS-1M-UNI 1p+N A B13/0.1	002176043	KZS-1M-UNI 1p+N A C13/0.1	002176053		
16		KZS-1M-UNI 1p+N A B16/0.1	002176044	KZS-1M-UNI 1p+N A C16/0.1	002176054		
20		KZS-1M-UNI 1p+N A B20/0.1	002176045	KZS-1M-UNI 1p+N A C20/0.1	002176055		
25		KZS-1M-UNI 1p+N A B25/0.1	002176046	KZS-1M-UNI 1p+N A C25/0.1	002176056		

ASTI / Residual Current Circuit Creakers with Integral Overcurrent Protection

KZS - 1M UNI

I_n [A]	$I_{\Delta n}$ [A]	Type AC Characteristic B	Code No. B	Type AC Characteristic C	Code No. C	g	
6	0,01	KZS-1M-UNI 1p+N AC B6/0.01	002176101	KZS-1M-UNI 1p+N AC C6/0.01	002176111	111	1/72
10		KZS-1M-UNI 1p+N AC B10/0.01	002176102	KZS-1M-UNI 1p+N AC C10/0.01	002176112		
13		KZS-1M-UNI 1p+N AC B13/0.01	002176103	KZS-1M-UNI 1p+N AC C13/0.01	002176113		
16		KZS-1M-UNI 1p+N AC B16/0.01	002176104	KZS-1M-UNI 1p+N AC C16/0.01	002176114		
20		KZS-1M-UNI 1p+N AC B20/0.01	002176105	KZS-1M-UNI 1p+N AC C20/0.01	002176115		
25		KZS-1M-UNI 1p+N AC B25/0.01	002176106	KZS-1M-UNI 1p+N AC C25/0.01	002176116		
6	0,03	KZS-1M-UNI 1p+N AC B6/0.03	002176121	KZS-1M-UNI 1p+N AC C6/0.03	002176131	111	1/72
10		KZS-1M-UNI 1p+N AC B10/0.03	002176122	KZS-1M-UNI 1p+N AC C10/0.03	002176132		
13		KZS-1M-UNI 1p+N AC B13/0.03	002176123	KZS-1M-UNI 1p+N AC C13/0.03	002176133		
16		KZS-1M-UNI 1p+N AC B16/0.03	002176124	KZS-1M-UNI 1p+N AC C16/0.03	002176134		
20		KZS-1M-UNI 1p+N AC B20/0.03	002176125	KZS-1M-UNI 1p+N AC C20/0.03	002176135		
25		KZS-1M-UNI 1p+N AC B25/0.03	002176126	KZS-1M-UNI 1p+N AC C25/0.03	002176136		
6	0,1	KZS-1M-UNI 1p+N AC B6/0.1	002176141	KZS-1M-UNI 1p+N AC C6/0.1	002176151	111	1/72
10		KZS-1M-UNI 1p+N AC B10/0.1	002176142	KZS-1M-UNI 1p+N AC C10/0.1	002176152		
13		KZS-1M-UNI 1p+N AC B13/0.1	002176143	KZS-1M-UNI 1p+N AC C13/0.1	002176153		
16		KZS-1M-UNI 1p+N AC B16/0.1	002176144	KZS-1M-UNI 1p+N AC C16/0.1	002176154		
20		KZS-1M-UNI 1p+N AC B20/0.1	002176145	KZS-1M-UNI 1p+N AC C20/0.1	002176155		
25		KZS-1M-UNI 1p+N AC B25/0.1	002176146	KZS-1M-UNI 1p+N AC C25/0.1	002176156		

Residual current circuit breaker with integral overcurrent protection KZS -1MS

Rated short-circuit capacity	Rated current	Tripping characteristic	Rated residual current
6 kA	**4 - 16 A**	**B, C**	**0,03 A**

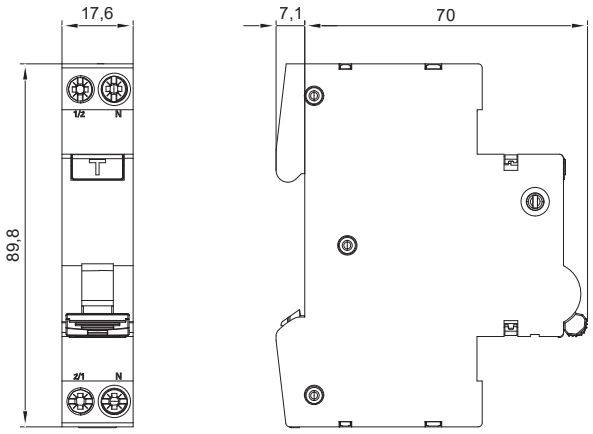
Residual current circuit breakers with overload protection combine residual current detection, short circuit and overcurrent protection in one device, thus enabling combined electric-shock and line protection. The protection devices enhance reliable operation and system availability, simplifying planning.
The new KZS-1MS is one of the first the first electromechanic (voltage independent) RCBO on the EN/IEC market in only one modular width.

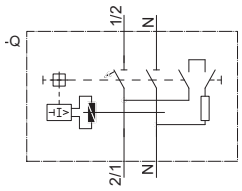
KZS - 1MS

I_n [A]	$I_{\Delta n}$ [A]	Type A Characteristic B	Code No. B	Type A Characteristic C	Code No. C	g	
4	0,03			KZS-1MS 1p+N A C4/0.03	002176211	115	1
6		KZS-1MS 1p+N A B6/0.03	002176202	KZS-1MS 1p+N A C6/0.03	002176212		
10		KZS-1MS 1p+N A B10/0.03	002176203	KZS-1MS 1p+N A C10/0.03	002176213		
13		KZS-1MS 1p+N A B13/0.03	002176204	KZS-1MS 1p+N A C13/0.03	002176214		
16		KZS-1MS 1p+N A B16/0.03	002176205	KZS-1MS 1p+N A C16/0.03	002176215		

Technical data

Type	KZS-1MS
Rated voltage U_n	230 V AC
Rated current I_n	4-16A
Rated frequency f_n	50/60 Hz
Rated short-circuit capacity	6.000 A
Rated insulation voltage U_i	253V
Energy limiting class	3
Tripping characteristic	B, C
Rated residual current $I_{\Delta n}$	30 mA
Type of residual release	A
Rated residual making and breaking capacity $I_{\Delta m}$	4,5kA
Peak withstand current	1kA (8/20ms)
Terminals	0,75-10mm2
Terminal screw	M4 (PZ2)
Terminal torque	1,2-2,0 Nm
Width	18mm
Mounting position	any
Operating temperature	-25°C…+40°C
Storage temperature	-40°C…+75°C
Resistance to climate (IEC 60068-2-30)	28 cycles (55°C; 95% rel. humidity)
Overvoltage category	III
Degree of polution	2
Operating cycles	> 10.000
Standard	IEC/EN 61009





I_n [A]	Maximum power dissipation	
	B characteristics	C characteristics
4A		2,3
6A	1,4	1,2
10A	2,2	1,9
13A	2,6	2,5
16A	3,7	3,4

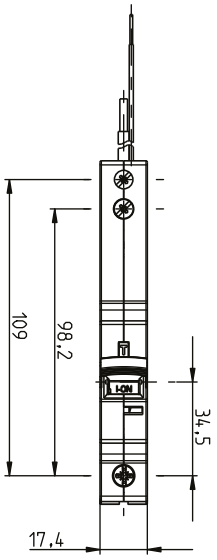
Residual current circuit breaker with integral overcurrent protection KZS -1M FN

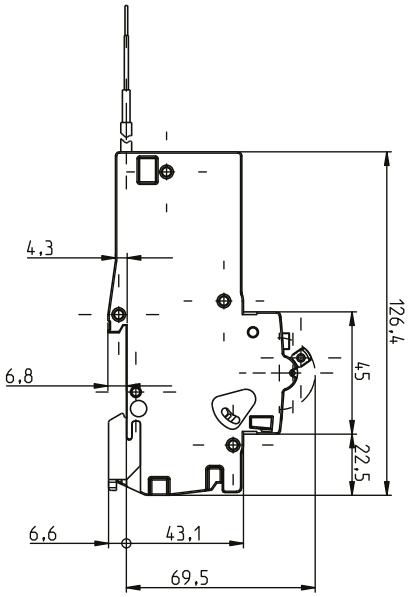
Rated short-circuit capacity	Rated current	Tripping characteristic	Rated residual current
10 kA	**6 - 45 A**	**B, C**	**0,03 - 0,1 A**

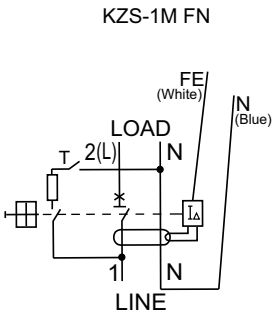
Description:
KZS -1M FN is a residual current circuit breaker with integral overcurrent protection, functionally dependent on line voltage.
It comes in a single pole version that switches the phase pole while the neutral pole stays fixed.
KZS 1M-FN is dependent on voltage and operates at voltages above 85V.
KZS 1M-FN also has a sealing possibility.

Technical data

Type	KZS 1M FN
Rated voltage U_n	230 V AC
Rated current I_n	6-45 A
Minimal supply voltage U_{min}	90 V
Rated frequency f_n	50 Hz
Rated short-circuit capacity	10.000 A
Back-up fuse	100 A gG
Tripping characteristic	B, C
Rated residual current $I_{\Delta n}$	30, 100 mA
Type of residual release	A, AC
Rated residual making and breaking capacity $I_{\Delta m}$	4500A
Terminals	1-25 mm² / 1-16 mm²
Terminal screw	M5 (Pozidrive PZ2)
Width	18 mm
Mounting position	any
Standard	IEC 61009-1 / 61009-2
Length of neutral conductor	600 mm
Operating temperature	-25°C ... +40°C
Storage temperature	-40°C ... +60°C







KZS - 1M FN $I_{\Delta n}$ = 30 mA

I_n [A]	$I_{\Delta n}$ [A]	Type A Characteristic C	Code No. B	Type A Characteristic C	Code No. C	g	
6	230	KZS-1M-FN A B6/0.03	002175581	KZS-1M-FN A C6/0.03	002175591	168	1/42
10		KZS-1M-FN A B10/0.03	002175582	KZS-1M-FN A C10/0.03	002175592	168	1/42
13		KZS-1M-FN A B13/0.03	002175583	KZS-1M-FN A C13/0.03	002175593	168	1/42
16		KZS-1M-FN A B16/0.03	002175584	KZS-1M-FN A C16/0.03	002175594	168	1/42
20		KZS-1M-FN A B20/0.03	002175585	KZS-1M-FN A C20/0.03	002175595	170	1/42
25		KZS-1M-FN A B25/0.03	002175586	KZS-1M-FN A C25/0.03	002175596	170	1/42
32		KZS-1M-FN A B32/0.03	002175587	KZS-1M-FN A C32/0.03	002175597	180	1/42
40		KZS-1M-FN A B40/0.03	002175588	KZS-1M-FN A C40/0.03	002175598	205	1/42
45		KZS-1M-FN A B45/0.03	002175589	KZS-1M-FN A C45/0.03	002175599	205	1/42

KZS - 1M FN $I_{\Delta n}$ = 30 mA

I_n [A]	$I_{\Delta n}$ [A]	Type A Characteristic C	Code No. B	Type A Characteristic C	Code No. C	g	
6	230	KZS-1M-FN AC B6/0.03	002175501	KZS-1M-FN AC C6/0.03	002175521	168	1/42
10		KZS-1M-FN AC B10/0.03	002175502	KZS-1M-FN AC C10/0.03	002175522	168	1/42
13		KZS-1M-FN AC B13/0.03	002175503	KZS-1M-FN AC C13/0.03	002175523	168	1/42
16		KZS-1M-FN AC B16/0.03	002175504	KZS-1M-FN AC C16/0.03	002175524	168	1/42
20		KZS-1M-FN AC B20/0.03	002175505	KZS-1M-FN AC C20/0.03	002175525	170	1/42
25		KZS-1M-FN AC B25/0.03	002175506	KZS-1M-FN AC C25/0.03	002175526	170	1/42
32		KZS-1M-FN AC B32/0.03	002175507	KZS-1M-FN AC C32/0.03	002175527	180	1/42
40		KZS-1M-FN AC B40/0.03	002175508	KZS-1M-FN AC C40/0.03	002175528	205	1/42
45		KZS-1M-FN AC B45/0.03	002175509	KZS-1M-FN AC C45/0.03	002175529	205	1/42

Can be used with auxiliary / signal switch PS/SS (001908421) - page 57

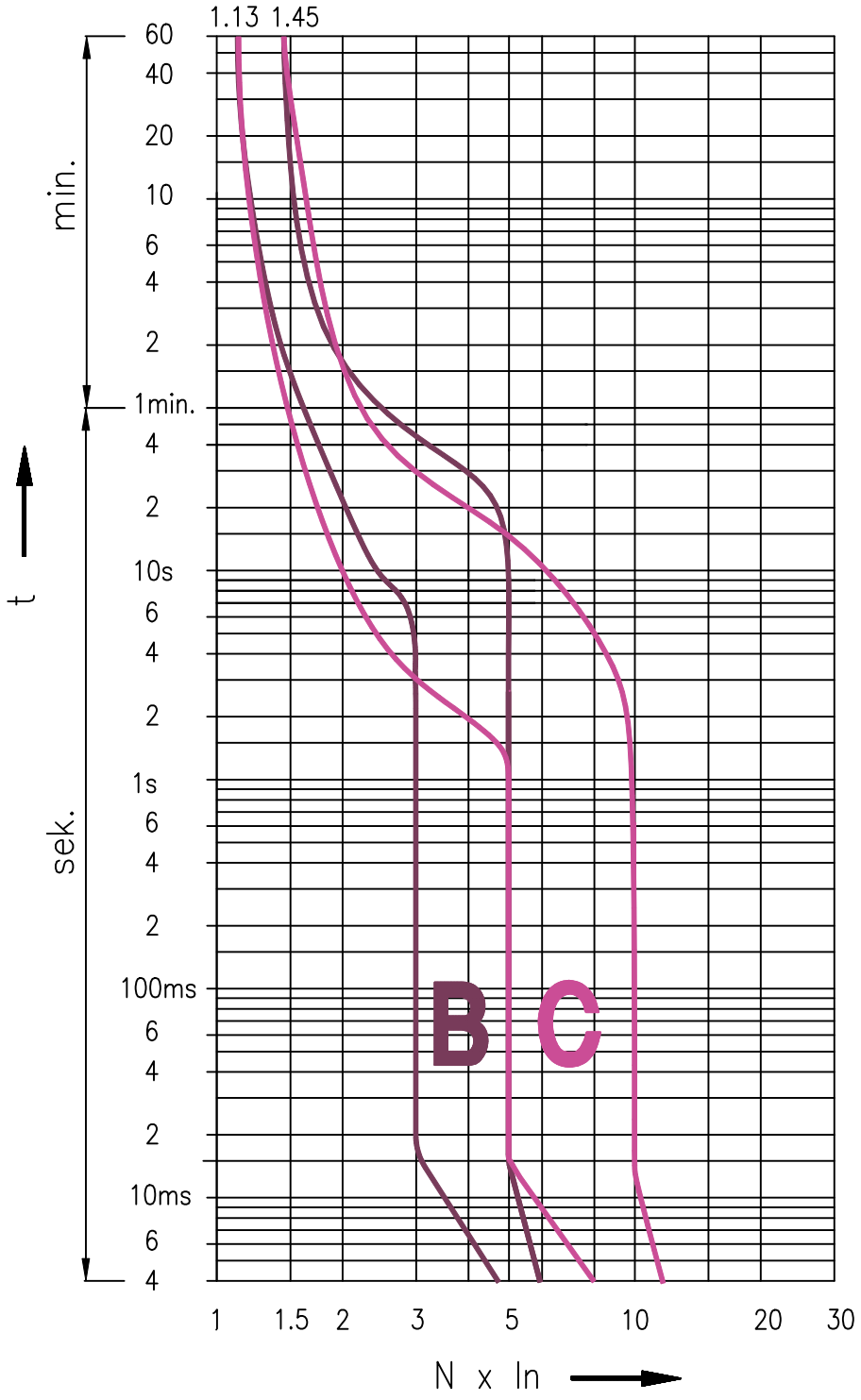
KZS - 1M FN $I_{\Delta n}$ = 100 mA

I_n [A]	$I_{\Delta n}$ [A]	Type A Characteristic C	Code No. B	Type A Characteristic C	Code No. C	g	
6	230	KZS-1M-FN A B6/0.1	002175781	KZS 1M-FN A C6/0.1	002175791	168	1/42
10		KZS-1M-FN A B10/0.1	002175782	KZS 1M-FN A C10/0.1	002175792	168	1/42
13		KZS-1M-FN A B13/0.1	002175783	KZS 1M-FN A C13/0.1	002175793	168	1/42
16		KZS-1M-FN A B16/0.1	002175784	KZS 1M-FN A C16/0.1	002175794	168	1/42
20		KZS-1M-FN A B20/0.1	002175785	KZS 1M-FN A C20/0.1	002175795	170	1/42
25		KZS-1M-FN A B25/0.1	002175786	KZS 1M-FN A C25/0.1	002175796	170	1/42
32		KZS-1M-FN A B32/0.1	002175787	KZS 1M-FN A C32/0.1	002175797	180	1/42
40		KZS-1M-FN A B40/0.1	002175788	KZS 1M-FN A C40/0.1	002175798	205	1/42
45		KZS-1M-FN A B45/0.1	002175789	KZS 1M-FN A C45/0.1	002175799	205	1/42

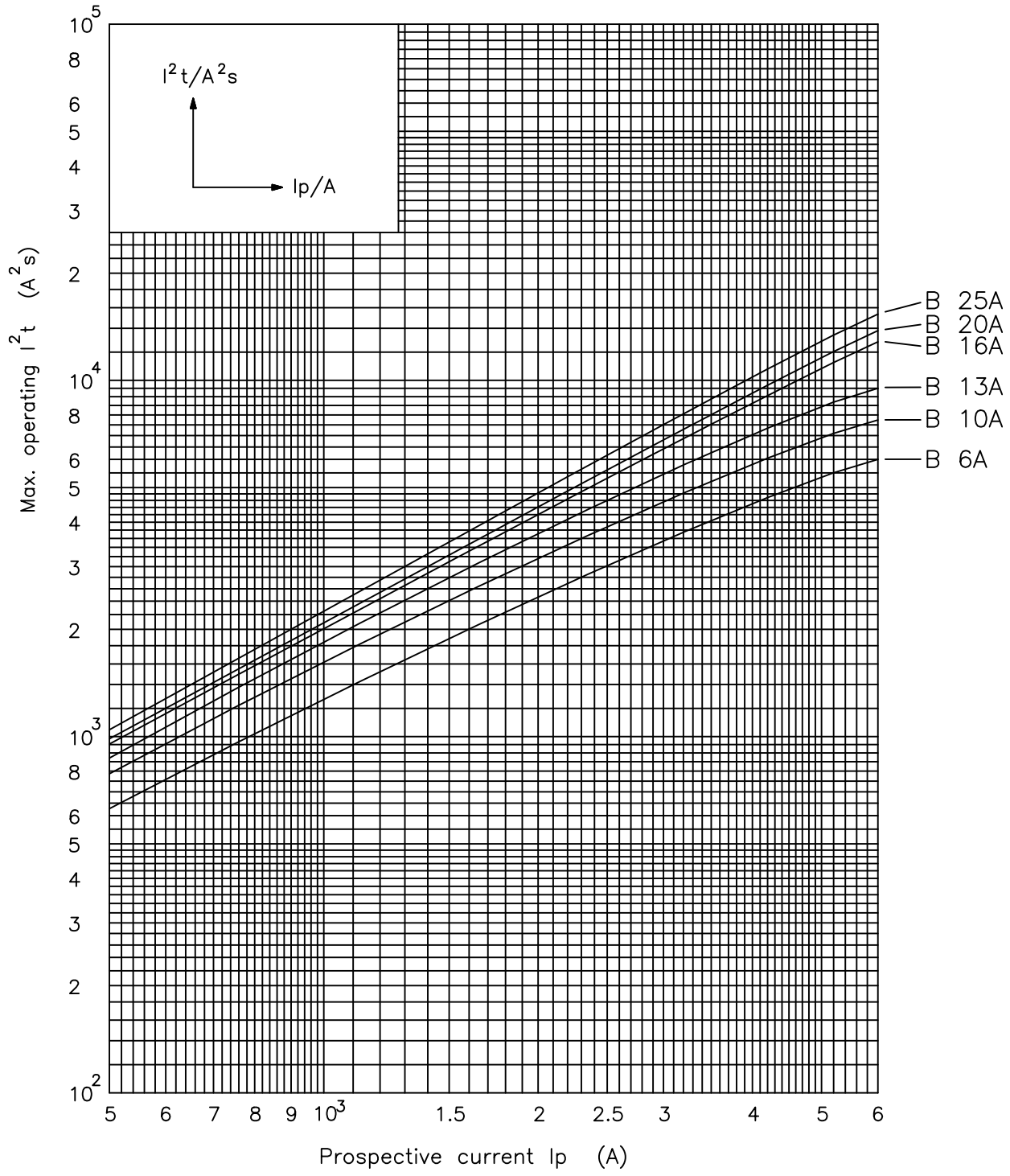
KZS - 1M FN $I_{\Delta n}$ = 100 mA

I_n [A]	$I_{\Delta n}$ [A]	Type A Characteristic C	Code No. B	Type A Characteristic C	Code No. C	g	
6	230	KZS-1M-FN AC B6/0.1	002175511	KZS-1M-FN AC C6/0.1	002175531	168	1/42
10		KZS-1M-FN AC B10/0.1	002175512	KZS-1M-FN AC C10/0.1	002175532	168	1/42
13		KZS-1M-FN AC B13/0.1	002175513	KZS-1M-FN AC C13/0.1	002175533	168	1/42
16		KZS-1M-FN AC B16/0.1	002175514	KZS-1M-FN AC C16/0.1	002175534	168	1/42
20		KZS-1M-FN AC B20/0.1	002175515	KZS-1M-FN AC C20/0.1	002175535	170	1/42
25		KZS-1M-FN AC B25/0.1	002175516	KZS-1M-FN AC C25/0.1	002175536	170	1/42
32		KZS-1M-FN AC B32/0.1	002175517	KZS-1M-FN AC C32/0.1	002175537	180	1/42
40		KZS-1M-FN AC B40/0.1	002175518	KZS-1M-FN AC C40/0.1	002175538	205	1/42
45		KZS-1M-FN AC B45/0.1	002175519	KZS-1M-FN AC C45/0.1	002175539	205	1/42

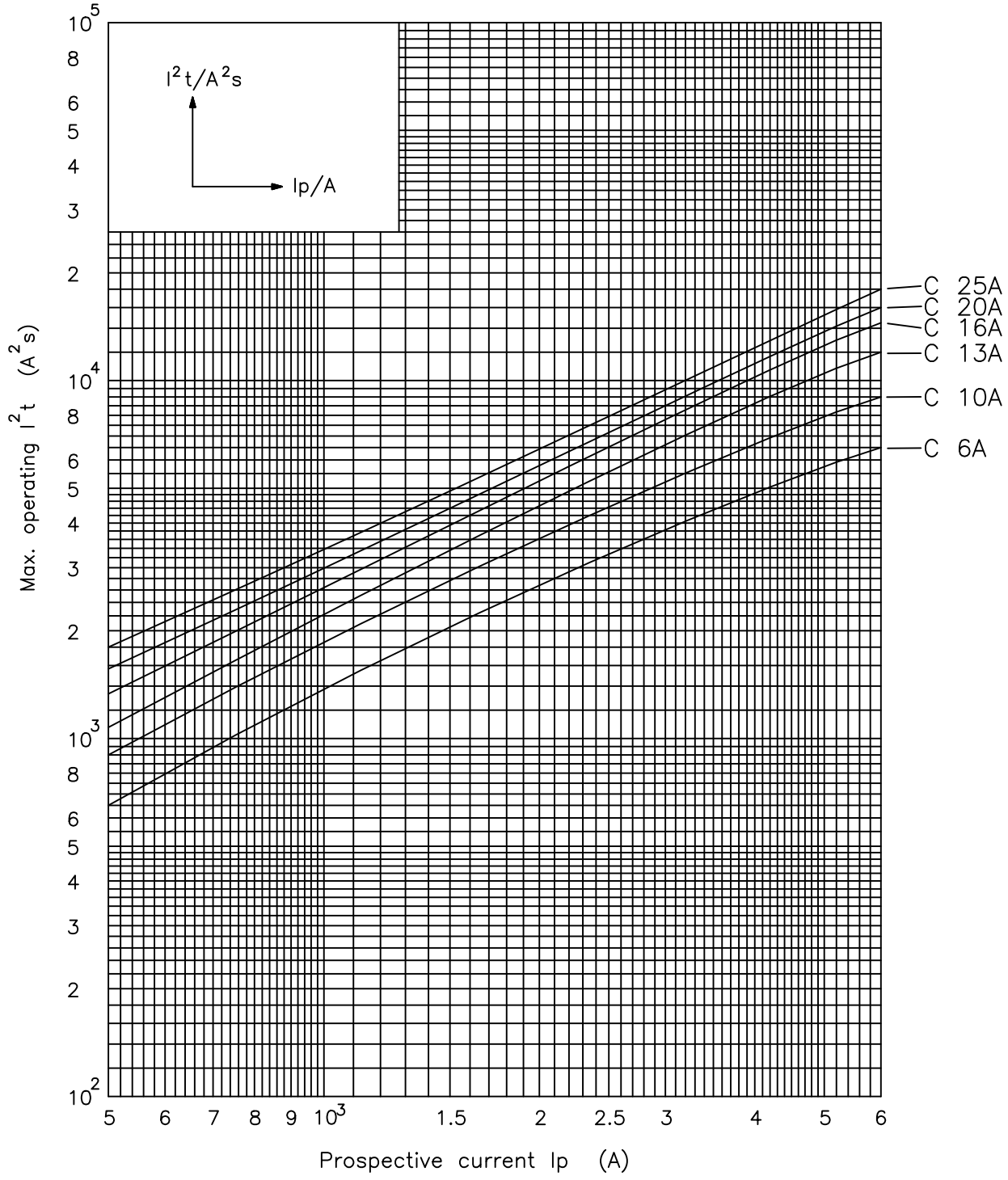
Time current characteristics I/t, KZS-1M



Melting energy characteristics I²t KZS-1M



Melting energy characteristics I²t KZS-1M



Cut-off current characteristics KZS-1M