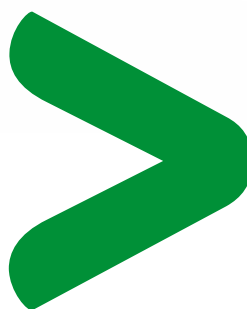


Low voltage

Acti 9

the efficiency you deserve

Catalogue
09/2013



General**Principle of catalogue numbers, protection (Acti 9)**

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Circuit protection

Choice of circuit protective devices

CA901011E 2

Circuit breaker panorama

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Acti 9 Smartlink

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TH4, TH7, THP1, THP2 thermostats	LSB02324EN	744

iID, iC60, Vigi iC60, Reflex iC60, switches

A9 R 15 2 63

Range	Family	Code	Internal code	Poles	Code	Rating (A)	Code
Acti 9 (A9)	iID	R		0	0	0	00
	Vigi iC60	V		1P	1	0.5	70
	iC60	F		2P	2	0.75	71
	iK60	K		3P	3	1	01
	Auxiliaries and accessories	A		4P	4	1.6	72
	Switches	S		1N	5	2	02
	Reflex iC60	C		1P+N	6	2.5	73
			3P+N	7	3	03	
					4		04
					6		06
					6.3		76
					8		08
					10		10
					12.5		82
					13		13
					16		16
					20		20
					25		25
					32		32
					40		40
					50		50
					63		63
					80		80
					100		91
					125		92

Comb busbar and comb busbar accessories

A9 X P H 4 12

Range	Family	Code	Type	Type of installation	Number of poles	Dimensioning			
Acti 9 (A9)	Comb busbar	X	Comb busbar		1P	1	Comb busbar		
			Fork teeth	F	Horizontal			H	Number of 18 mm modules (approximately)
			Pin teeth	P			2P	2	Accessories
			Auxiliarisable	A			3P		
			Accessories				4P		
			End-piece	E	Double terminals	D	4P balanced, with neutral	5	Number of pieces per cat. no.
			Tooth cover	T	Single terminal	M	3P balanced for single-poles	6	
			Connector	C					



Protection of electrical connections against short circuits and overloads



Protection of loads against overloads



Protection of control devices



Protection for people against indirect contacts in IT and TN earthing systems

- Circuit breakers can:
 - break a faulty electrical circuit (short-circuit, overload, insulation fault), to prevent fires,
 - protect control devices,
 - increase the service life of the installation, thanks to its ability to limit the short-circuit current (see module CA908025),
 - in IT and TN systems, they ensure personal protection against electrocution in the event of indirect contacts.
- The choice of circuit breakers must be optimised to provide absolute protection while ensuring continuity of service.
- Although circuit breakers are sometimes used as control units, it is recommended to install separate control devices which are more suitable for frequent switching operations (switch, contactor, impulse relay).

Choice of protective circuit breakers

This depends on several criteria:

- prospective short-circuit current
- max. voltage rating
- planned amperage for the circuit to be protected
- nature and cross section of cables
- ambient temperature (possible derating)
- the network and neutral system, which determine the number of poles of the protective circuit breaker installed on their power supply circuit and the tripping curve
- coordination with the other electrical devices (protection, discrimination, cascading).

Choice of breaking capacity

- The breaking capacity must be greater than or equal to the prospective short-circuit current (I_{sc}) upstream of the circuit-breaker (I_{sc} depends on the length, type of conductor and cross section of the cable and the power of the source).
- However, in the event of use in combination with an upstream circuit-breaker limiting the current, this breaking capacity can possibly be reduced (cascading, see module 557E4200).

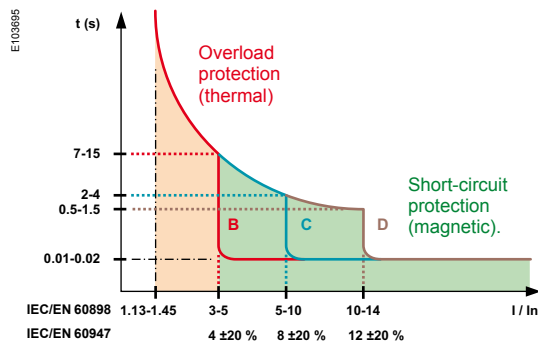
Choice of rating

- The rating (I_n) is chosen above all to protect the electrical connections:
 - for cables: it is chosen according to the cross section and type of conductor,
 - for Canalis prefabricated busbar trunking: it must be simply less than or equal to the rating of the busbar trunking.
- The rating should be greater than the nominal current of the loads.

Choice of tripping curve

The tripping curve makes the protection more or less sensitive to:

- the inrush current at power up
- the overload current.





Tripping thresholds ($\times I_n$)

Curves	IEC /EN 60898	IEC/EN 60947-2
B	Between 3 I_n and 5 I_n	4 ± 20 %
C	Between 5 I_n and 10 I_n	8 ± 20 %
D or K	Between 10 I_n and 14 I_n	12 ± 20 %
MA	-	12 ± 20 %
Z	-	3 ± 20 %

- To prevent nuisance tripping, it may be advisable to choose a less sensitive curve, e.g. change from B to C (tripping curves, see module CA908024).






Selection guide (cont.)

Circuit breakers






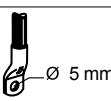
Type		C120N	C120H			
						
Standard		IEC/EN 60898-1		IEC/EN 60898-1		
Quality label		Country approval pictogram		Country approval pictogram		
Number of poles		1P	2, 3, 4P	1P	2, 3, 4P	
Add-on residual current devices (Vigi)		■		■		
Auxiliaries for remote tripping and indication		■		■		
Electrical characteristics						
Curves		B, C, D		B, C, D		
Ratings (A)	In	63 to 125		63 to 125		
Maximum operational voltage (V)	Ue max	AC (50/60 Hz)	240/415, 440			
		DC	125 per pole			
Minimum operational voltage (V)	Ue min	AC (50/60 Hz)	12			
		DC	12			
Insulation voltage (V AC)		Ui		500		
Rated impulse withstand voltage (kV)		Uimp		6		
Breaking capacity						
IEC/EN 60898 (A)	Icn	230/400 V	10000	10000	15000	15000
AC-Breaking capacity	Ue	(50/60 Hz)	1P	2, 3, 4P	1P	2, 3, 4P
Ratings (A)	In	63 to 125		63 to 125		
IEC 60947-2 (kA)	Icu	110...130 V	–	–	–	–
		12...130 V	20	–	30	–
		220...240 V	10	20	15	30
		380...415 V	3⁽¹⁾	10	4.5⁽¹⁾	15
		440 V	–	6	–	10
		500 V	–	–	–	–
Ics	75 % of Icu		50 % of Icu			
DC-Breaking capacity						
IEC 60947-2 (kA)	Icu	12...125 V (1P)	15	20		
		≤ 144 V (1P)	10	15		
		≤ 250 V (2P)	10	15		
		≤ 375 V (3P)	10	15		
		≤ 500 V (4P)	10	15		
		Ics	100 % of Icu		100 % of Icu	
Other characteristics						
Suitable for industrial isolation according to IEC/EN 60947-2		■		■		
Reference temperature IEC/EN 60947-2		50°C		50°C		
Fault tripping indication		–		–		
Positive contact indication		■		■		
Fast closing		■		■		
Degree of protection	IP	Device only	IP20			
		Device in modular enclosure	IP40			
For more detail, see module		CA901015		CA901016		
Accessories		CA907012 and CA907013		CA907012 and CA907013		
Auxiliaries		CA907008 and CA907013		CA907008 and CA907013		
Earth leakage module (Vigi)		CA902016		CA902016		


(1) Breaking capacity under 1 pole with IT isolated neutral system (case of double fault).

Accessories for C120, DPN, DPN Vigi, C60H-DC, SW60-DC, C60NA-DC, C60PV-DC, iSW devices (cont.)

Safety							
Accessories	Screw shield		Terminal shield			Interpole barrier	Spacer
							
	056870_SE-33	PB124114	056869_SE-38			DB123988	PB104483-35
Function	Prevents all contact with the fixing screws <ul style="list-style-type: none"> ■ The degree of protection becomes IP40 ■ Sealable, max. diameter 1.2 mm ■ Dividable 		Prevents all contact with the terminals <ul style="list-style-type: none"> ■ Degree of protection becomes IP40 ■ Sealable, max. diameter 1.2 mm <ul style="list-style-type: none"> ■ 1P ■ 1P ■ 2P <ul style="list-style-type: none"> ■ 3P: 1 x 26975 + 1 x 26976 ■ 4P: 2 x 26976 			Improves the insulation between the connections: cables, terminals, lugs, etc.	<ul style="list-style-type: none"> ■ Used to: <ul style="list-style-type: none"> □ complete the rows □ separate the devices ■ Width: 1 x 9 mm module ■ Allows that 2 cables are routed from one row to another (above and below), up to 6 mm²
Cat. numbers	18527	26981	18526	26975	26976	27001	A9N27062
Set of	2 (4P dividable)		2 (for upstream/downstream terminal)			10	1
Suitable for the following devices:							
C120, C120NA-DC	■	–	■	–	–	■	■
Vigi C120	–	–	–	–	–	–	■
DPN, DPN Vigi	–	–	–	–	–	–	■
C60H-DC	–	■	–	■	■	■	■
SW60-DC, C60NA-DC, C60PV-DC	–	■	–	–	–	■	■
iSW	–	■ iSW 40 to 125 A	–	■ iSW 40 to 125 A	–	■ iSW 40 to 125 A	■

Accessories for C120, DPN, DPN Vigi, C60H-DC, SW60-DC, C60NA-DC, C60PV-DC, iSW devices (cont.)

		Connection				
Accessories	Multi-cable terminal	50 mm ² Al terminal	Screw-on connection for ring terminal	Connection kit for ring terminals	Terminal for rear connector	
						
	DB118780	DB118782	DB123897	058967N-23	DB118784	
Function						
	For 3 copper cables: ■ Rigid up to 16 mm ² ■ Flexible up to 10 mm ²	For 16 to 50 mm ² aluminium cables	For lug tipped cables, front or rear mounting	For terminal up to 63 A, front or rear access (screw Ø 5 mm) ■ It incorporates a "conductive" part and an "insulating" part which ensures the phase-to-phase clearance	For cable up to 50 mm ² or by terminal ■ Supplied with a 1P terminal shield	
						
	DB118787	DB122935	DB118789			
			Ø 5 mm			
Cat. numbers	19091	19096	27060	27053	17400	18528
Set of	4	3	1	8	2	2
C120, C120NA-DC	■	■	■	■	-	■
Vigi C120	■	■	■	-	-	-
DPN, DPN Vigi	-	-	-	■	-	-
C60H-DC, iSW 40 to 125 A	■	■	■	■	■	-
SW60-DC, C60NA-DC	■	■	■	■	-	-
C60PV-DC	-	-	-	■	-	-
Tightening torque	2 N.m		10 N.m	2 N.m	-	-
Stripping length	11 mm		13 mm	-	-	-
Tools to be used	Diameter 5 mm or PZ2		Hc 1/5" or 5 mm	Diameter 5 mm	Diameter 5 mm	-

		Identification			
Accessories	Clip-on terminal marker strip				
					
	031294D_SE23				
Function					
	For connection identification				
Cat. numbers	0: AB1-R0 1: AB1-R1 2: AB1-R2 3: AB1-R3 4: AB1-R4 5: AB1-R5 6: AB1-R6 7: AB1-R7 8: AB1-R8 9: AB1-R9	A: AB1-GA B: AB1-GB C: AB1-GC D: AB1-GD E: AB1-GE F: AB1-GF G: AB1-GG H: AB1-GH I: AB1-GI J: AB1-GJ	K: AB1-GK L: AB1-GL M: AB1-GM N: AB1-GN O: AB1-GO P: AB1-GP Q: AB1-GQ R: AB1-GR S: AB1-GS T: AB1-GT	U: AB1-GU V: AB1-GV W: AB1-GW X: AB1-GX Y: AB1-GY Z: AB1-GZ +: AB1-R12 -: AB1-R13 Blank : AB1-RV	
Set of	250				
C120, C120NA-DC	■ 4 markers max. per pole				
Vigi C120	■ 4 markers max. per device				
DPN, DPN Vigi	■ 4 markers max. per pole				
C60H-DC, SW60-DC, C60NA-DC, C60PV-DC	■ 4 markers max. per pole				