

Electrical installation solutions for buildings – Technical details

Arc Fault Detection Devices

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DS-ARC1

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AFDD technical details

Functions and classification criteria for AFDD

Functions and classification criteria for AFDD

An AFDD (Arc Fault Detection Device) according to the product standard "IEC 62606 - General requirements for Arc Fault Detection Devices" is a device intended to mitigate the effects of arcing faults by disconnecting the circuit when an arc fault is detected: this product standard is partially derived from the UL 1699 standard.

Three different type of products are described in IEC 62606 standard:

- **AFDD in series with protection device:**

AFDD as one single device, comprising an AFD unit and opening means and intended to be connected in series with a suitable short circuit protective device declared by the manufacturer complying with one or more of the following standards IEC 60898-1, IEC 61009-1 or IEC 60269 series.

- **Integrated solution:**

AFDD as one single device, comprising an AFD unit integrated in a protective device complying with one or more of the following standards IEC 60898-1, IEC 61008-1, IEC 61009-1 or IEC 62423.

- **AFDD + protection device assembled on site:**

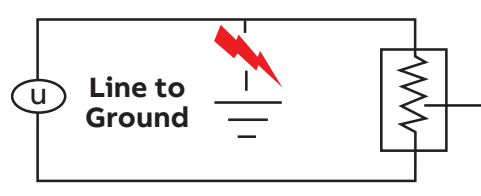
AFDD according to Annex D, comprised of an AFD unit and a declared protective device, intended to be assembled on site.

Different levels of protection

RCDs are recognized efficient to reduce the risk of fire by detection of leakage current and arcing to ground as a consequence of tracking currents within an electrical installation. For this reason RCDs can detect only earth arc faults.

In case of parallel arc faults MCBs and fuses can trip only if their intervention time-current curves are compatible with the values of the current of the arc faults, thus the trip is not instantaneous.

AFDD can guarantee protection against all types of arc faults:



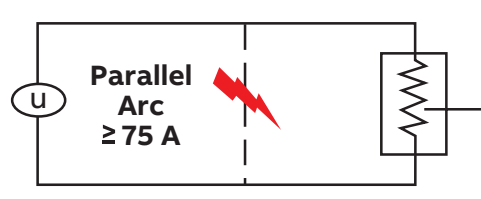
Earth arc fault

current is following from active conductor to the earth



Series arc fault

current is following within one conductor of the final circuit



Parallel arc fault

current is following between active conductors in parallel with the load of the circuit

Series arc faults are generally weak to be detected by MCBs.

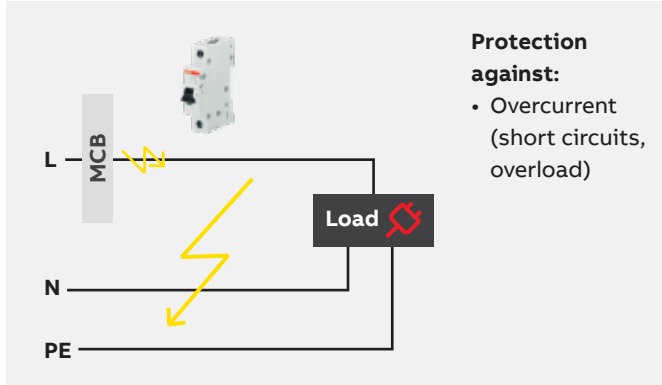
MCBs can not detect earth arc faults because the current values are in general rather low.

In order to ensure a complete protection against arc faults, it is required the installation of an AFDD.

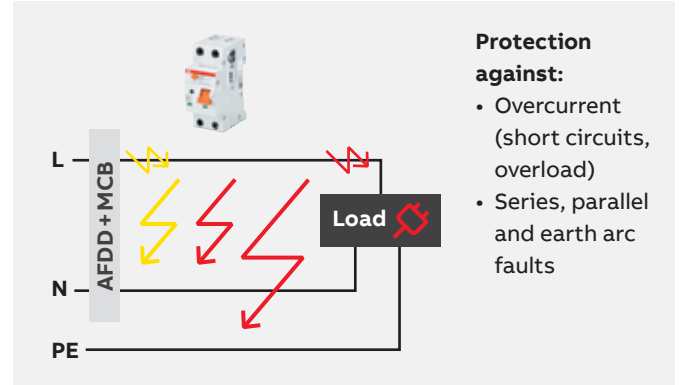
AFDD technical details

Functions and classification criteria for AFDD

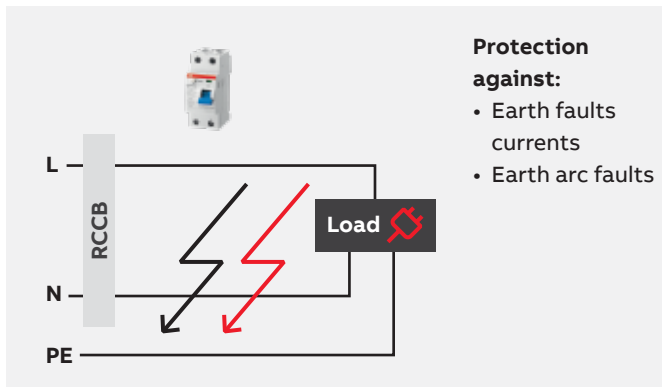
01 MCB



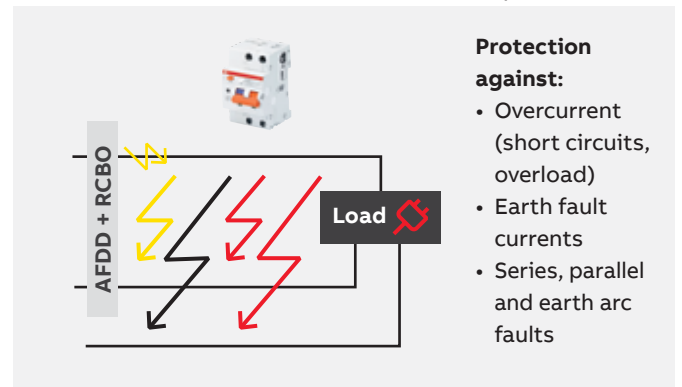
01 S-ARC1 AFDD with integrated MCB



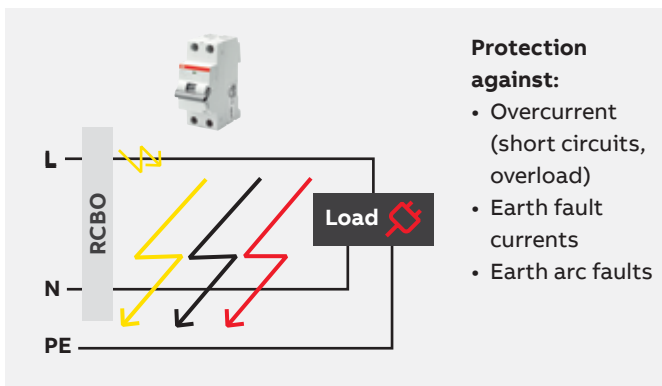
02 RCCB



02 DS-ARC1 AFDD with integrated RCBO



03 RCBO



AFDD technical details

Power loss, derating and performance in altitude

Voltage drop, Internal resistance, Power loss and own consumption for S-ARC1 series

In [A]	Voltage drop [mV]	Internal resistance [mΩ]	Power loss [W]	Own consumption [W]
6	380	63.3	2.3	0.5
10	203	20.3	2.0	0.5
13	166	12.8	2.2	0.5
16	175	10.9	2.8	0.5
20	182	9.1	3.6	0.5
25	141	5.6	3.5	0.5
32	150	4.7	4.8	0.5
40	155	3.9	6.2	0.5

Derating in temperature for S-ARC1 series

Max operating current depending on the ambient temperature of a circuit breaker in load circuit of characteristics type B and C.

Daily average ambient temperature is intended to be $\leq +35$ °C.

In (A)	Temperature (°C)									
	-25	-20	0	10	20	25	30	40	50	55
6	7.2	6.8	6.4	6.3	6.1	6.0	6.0	6.0	5.8	5.8
10	12.2	11.9	10.8	10.7	10.5	10.2	10.0	10.0	9.8	9.6
13	15.6	15.2	14.2	13.8	13.4	13.2	13.0	12.9	12.7	12.6
16	19.5	18.9	17.9	17.3	16.7	16.3	16.0	15.8	15.5	15.4
20	24.4	24.0	22.4	21.6	21.0	20.4	20.0	19.8	19.5	19.4
25	29.5	28.9	28.0	27.0	26.2	25.5	25.0	24.6	24.2	24.0
32	36.5	35.9	35.0	33.9	33.0	32.3	32.0	31.1	30.4	30.0
40	47.0	46.4	43.0	42.1	41.1	40.4	40.0	38.9	38.0	37.1

Performance in altitude for S-ARC1 series

Elevation [m]	3000	4000	5000	6000
Rated Current [A]	0,96 x In	0,94 x In	0,92 x In	0,90 x In
Rated Voltage [V]	0,877 x Un	0,775 x Un	0,676 x Un	0,588 x Un

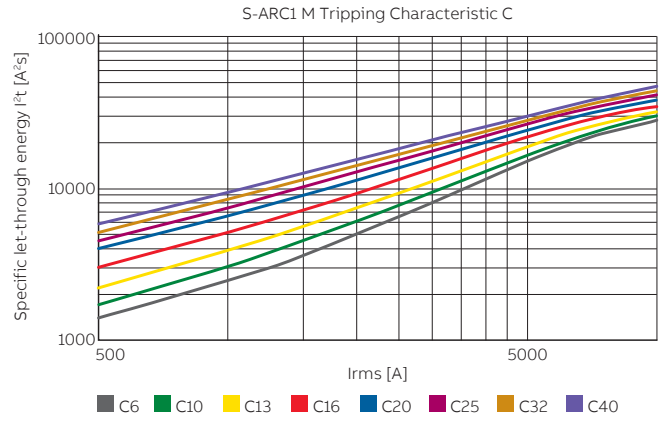
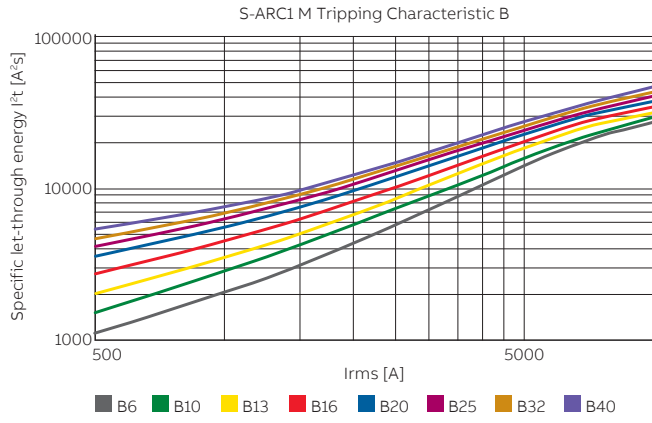
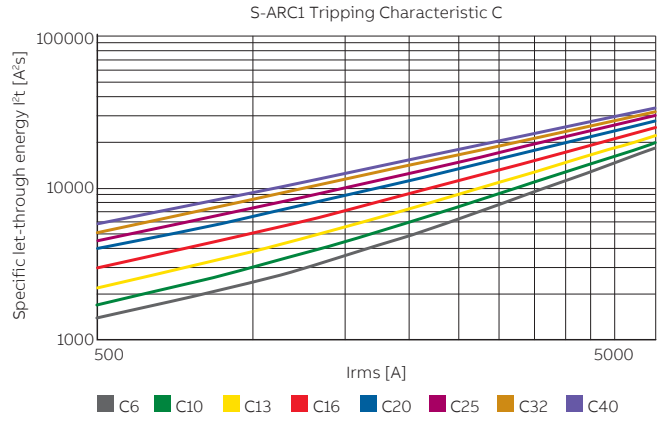
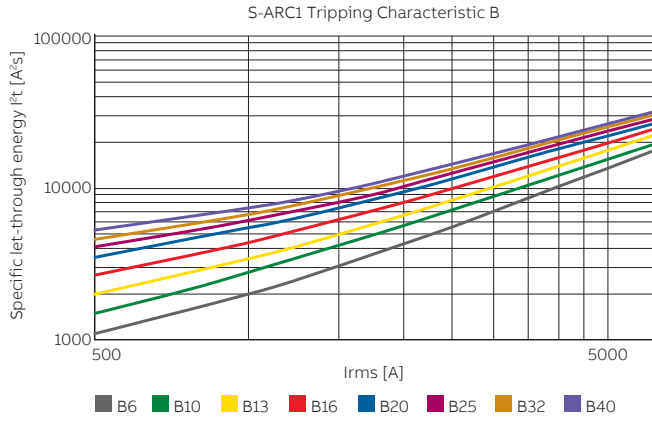
For altitude higher than 3.000m the isolating characteristic is no longer available.

Influence of adjacent devices

Number of devices	Correction factor
1	1
3	0,92
5	0,88
7	0,85
9	0,84

AFDD technical details

Specific let-through energy I^2t S-ARC1 and S-ARC1 M



01 I^2t
S-ARC1 Tripping
Characteristics B

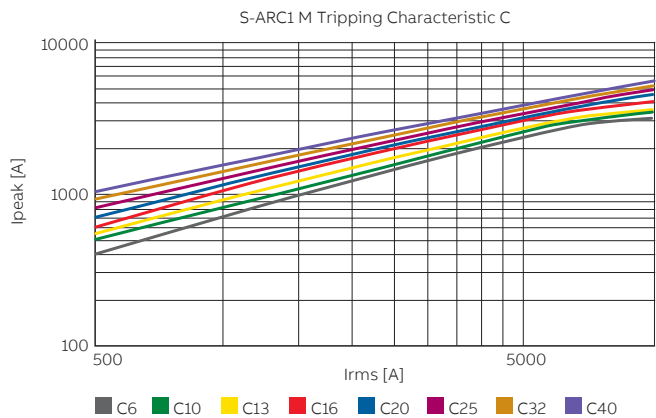
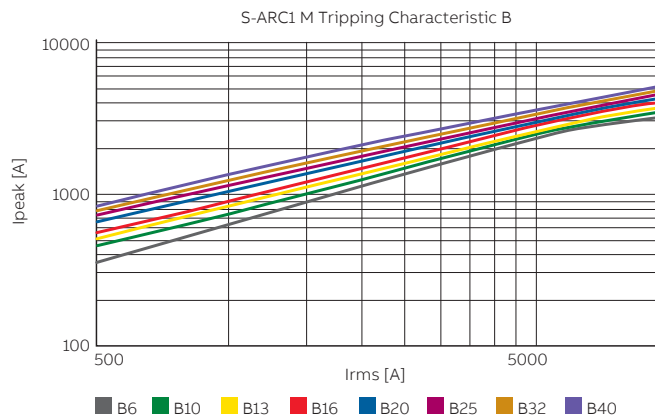
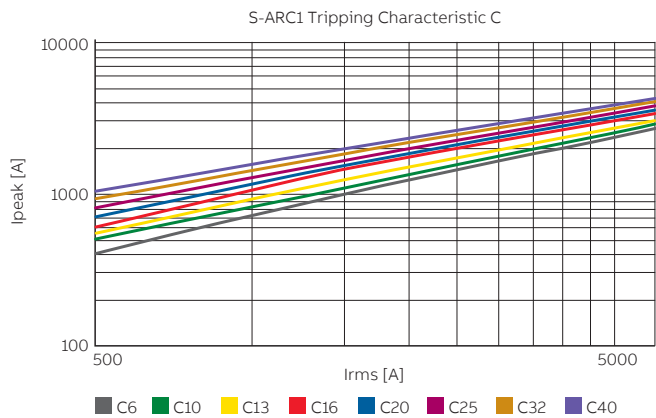
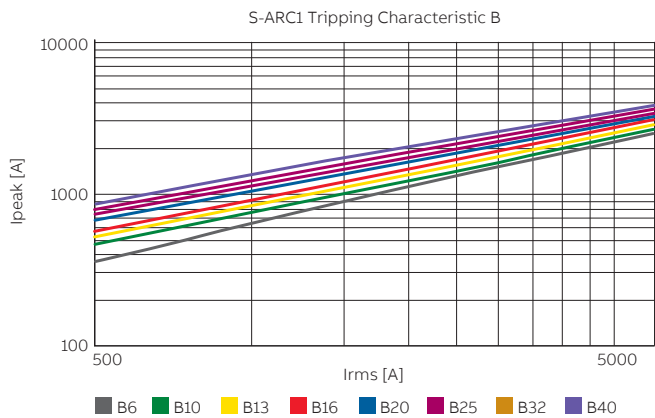
02 I^2t
S-ARC1 Tripping
Characteristics C

03 I^2t
S-ARC1 M Tripping
Characteristics B

04 I^2t
S-ARC1 M Tripping
Characteristics C

AFDD technical details

I_{peak} S-ARC1 and S-ARC1 M



—
01 I_{peak}
S-ARC1 Tripping
Characteristics B

—
02 I_{peak}
S-ARC1 Tripping
Characteristics C

—
03 I_{peak}
S-ARC1 M Tripping
Characteristics B

—
04 I_{peak}
S-ARC1 M Tripping
Characteristics C

AFDD technical details

Coordination tables: S-ARC1, S-ARC1M back-up

Fuses - S-ARC1, S-ARC1 M@230/230/240V

		Supply S.		gL/gG					
Load S.		Icu [kA]	In[A]	25	40	50	63	80	100
S-ARC1, S-ARC1 M	B,C	7.5 and 10	6...40	35	25	20	15	10	10

MCCB@415V - S-ARC1, S-ARC1 M@230/240V

		Upstream		XT1	XT1	XT1	XT2	XT3	XT4	XT1	XT2	XT3	XT4	XT1	XT2	XT4	XT2	XT4		
Char		B	C	N	N	N	N	N	S	S	S	S	H	H	H	L	L	V	V	
Down-stream	Icu [kA]	In[A]	18	25	36	36	36	36	50	50	50	50	70	70	70	120	120	150	150	
S-ARC1	B,C	7.5	6...25 32, 40	16	16	16	20	10	10	16	20	10	10	16	20	10	20	10	20	10
S-ARC1M	B,C	10	6...16 20, 25 32, 40	16	16	16	25	16	25	16	25	16	25	16	25	25	25	25	25	25
				16	16	16	16	16	10	16	16	16	10	16	16	10	16	10	16	10

MCCB @415V - S-ARC1, S-ARC1 M@230/240V

		Supply S.		T1	T1	T1	T2	T3	T4	T2	T3	T4	T2	T4	T2	T4	T4
Char		B	C	N	N	N	N	N	S	S	S	H	H	L	L	V	
Load S.	Icu [kA]	In[A]	16	25	36	36	36	36	50	50	50	70	70	85	120	200	
S-ARC1	B,C	7.5	6...25 32, 40	16	16	16	20	10	10	20	10	10	20	10	20	10	10
S-ARC1M	B,C	10	6...25 32, 40	16	16	16	25	16	25	25	16	16	25	16	25	16	16
				16	16	16	16	16	16	16	16	16	16	16	16	16	16

S800S - S-ARC1, S-ARC1 M@ 230/240V

		Supply S.		S800S									
Char		B	C	B,C,D,K									
Load S.	Icu [kA]	50											
	In[A]	25	32	40	50	63	80	100	125				
S-ARC1	B,C	7.5	6...16	50	40	25	25	18	15	15	15		
			20	40	25	25	18	15	15	15			
			25	25	25	18	15	15	15				
			32	25	25	18	15	15	15				
			40	18	15	15	15						
S-ARC1M	B,C	10	6...16	50	50	50	50	50	50	50	50		
			20	50	50	50	50	50	50	50			
			25	50	50	50	50	50	50				
			32	50	50	50	50	50					
			40	50	50	50	50						

S800N - S-ARC1, S-ARC1 M@ 230/240V

		Supply S.		S800N									
Char		B	C	B,C,D									
Load S.	Icu [kA]	36											
	In[A]	25	32	40	50	63	80	100	125				
S-ARC1	B,C	7.5	6...16	36	36	25	25	18	15	15	15		
			20	36	25	25	18	15	15	15			
			25	25	25	18	15	15	15				
			32	25	25	18	15	15	15				
			40	18	15	15	15						
S-ARC1M	B,C	10	6...16	36	36	36	36	36	36	36	36		
			20	36	36	36	36	36	36	36			
			25	36	36	36	36	36	36				
			32	36	36	36	36	36					
			40	36	36	36	36						

AFDD technical details

Coordination tables: S-ARC1, S-ARC1M back-up

S800C - S-ARC1, S-ARC1 M@ 230/240V

Supply S.		S800C									
Char		B,C,D,K									
Load S.	Icu [kA]	25									
S-ARC1	B,C	7.5	In[A]	25	32	40	50	63	80	100	125
			6...16	25	25	25	25	18	15	15	15
			20		25	25	25	18	15	15	15
			25			25	25	18	15	15	15
			32				25	18	15	15	15
S-ARC1M	B,C	10	6...16	25	25	25	25	25	25	25	25
			20		25	25	25	25	25	25	25
			25			25	25	25	25	25	25
			32				25	25	25	25	25
			40					25	25	25	25

S800B - S-ARC1, S-ARC M@ 230/240V

Supply S.		S800B								
Char		B,C,D,K								
Load S.	Icu [kA]	25								
S-ARC1	B,C	7.5	In[A]	32	40	50	63	80	100	125*
			6...20	16	16	16	16	15	15	15
			25		16	16	16	15	15	15
			32			16	16	15	15	15
			40				16	15	15	15
S-ARC1M	B,C	10	6...20	16	16	16	16	16	16	16
			25		16	16	16	16	16	16
			32			16	16	16	16	16
			40				16	16	16	16
								16	16	16

*Only S800B B,C

S200 - S-ARC1, S-ARC1 M@230/240V

Supply S.		S200	S200M	S200P	S200P		
Char		B-C	B,C	B,C	B,C		
Load S.	Icu [kA]	20	25	40	25		
S-ARC1,	B,C	7.5 and 10	In[A]	0.5..63	0.5...63	0.5...25	32
S-ARC1 M			6...20	20	25	40	25

DS201 - S-ARC1, S-ARC1 M @230/240V

Supply S.		DS201		
Char		B,C		
Load S.	In[A]	2...40		
S-ARC1, S-ARC1 M	B,C	6...40	Icu [kA]	10
			7.5 and 10	10

AFDD technical details

Coordination tables: S-ARC1, S-ARC1M selectivity

Fuse gL/gG- S-ARC1, S-ARC M @ 230/400V

Load S.	Char	Supply S. Icu [kA]	Fuse gL/gG								
			In[A]	25	32	40	50	63	80	100	125
S-ARC1	B,C	7.5	6	1	1.5	4	4.5	T	T	T	T
			10		1.2	3.5	4	T	T	T	T
			13		1	3	3.5	5	T	T	T
			16		1	3	3.5	5	T	T	T
			20		1	3	3.5	5	T	T	T
			25		1	2	3	4.5	T	T	T
			32		1	2	3	4.5	5	T	T
S-ARC1M	B,C	10	6	1	1.5	4	4.5	7	T	T	T
			10		1.2	3.5	4	6	T	T	T
			13		1	3	3.5	5	T	T	T
			16		1	3	3.5	5	T	T	T
			20		1	3	3.5	5	8	T	T
			25		1	2	3	4.5	6.5	9	T
			32		1	2	3	4.5	5	8	T
					1.5	2.5	4	5	6.5	9	

MCCB@415V - S-ARC1, S-ARC1 M @230/240V

Load S.	Char	Supply S. Icu [kA]	XT1												
			In[A]	Version											
				B,C,N,S,H											
				Release											
TM															
				16	20	25	32	40	50	63	80	100	125	160	
S-ARC1	B,C	7.5	6	T	T	T	T	T	T	T	T	T	T	T	T
			10			3	3	3	4.5	T	T	T	T	T	
			13					3	4.5	5	T	T	T	T	
			16					3	4.5	5	T	T	T	T	
			20						3	5	T	T	T	T	
			25							5	T	T	T	T	
			32									T	T	T	T
S-ARC1M	B,C	10	6	6	6	6	6	6	6	T	T	T	T	T	
			10			3	3	3	4.5	7.5	8.5	T	T	T	
			13					3	4.5	5	7.5	T	T	T	
			16					3	4.5	5	7.5	T	T	T	
			20						3	5	6	T	T	T	
			25							5	6	T	T	T	
			32								6	7.5	T	T	
										7.5	T	T			

AFDD technical details

Coordination tables: S-ARC1, S-ARC1M selectivity

MCCB@415V - S-ARC1, S-ARC1 M @230/240V

Load S.	Char	Icu [kA]	Supply S.													XT2				
			Version													N,S,H,L,V				
			Release													TM				EL
In[A]	16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160				
S-ARC1	B,C	7.5	6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
			10		3 ¹	3	3	3	4.5	T	T	T	T	T	T	T	T	T	T	
			13				3 ¹	3	4.5	5	T	T	T	T		T	T	T	T	
			16				3 ¹	3	4.5	5	T	T	T	T		T	T	T	T	
			20				3 ¹		3	5	T	T	T	T		T	T	T	T	
			25						3.1	5	6	T	T	T		T	T	T	T	
			32						3.1		T	T	T	T		T	T	T	T	
S-ARC1M	B,C	10	6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
			10		3 ¹	3	3	3	4.5	7.5	8.5	T	T	T	T	T	T	T	T	
			13				3 ¹	3	4.5	5	7.5	T	T	T		T	T	T	T	
			16				3 ¹	3	4.5	5	7.5	T	T	T		T	T	T	T	
			20				3 ¹		3	5	6	T	T	T		T	T	T	T	
			25						3.1	5	6	T	T	T		T	T	T	T	
			32						3.1		6	7.5	T	T		T	T	T	T	
40								6	7.5	T	T				T	T				

¹ Value valid in case of Supply S. breaker only magnetic

MCCB@415V - S-ARC1, S-ARC1 M @230/240V

Load S.	Char	Icu [kA]	Supply S.										XT3		
			Version										N,S		
			Release										TM		
In[A]	63	80	100	125	160	200	250	10	25	63	100	160			
S-ARC1	B,C	7.5	6	T	T	T	T	T	T	T	T	T	T	T	
			10	T	T	T	T	T	T	T	T	T	T	T	
			13	5	T	T	T	T	T	T	T	T	T	T	
			16	5	T	T	T	T	T	T	T	T	T	T	
			20	5	T	T	T	T	T	T	T	T	T	T	
			25	5	6	T	T	T	T	T	T	T	T	T	
			32		6	7.5	T	T	T	T	T	T	T	T	
40		6 ¹	7.5	T	T	T	T	T	T	T	T				
S-ARC1M	B,C	10	6	T	T	T	T	T	T	T	T	T	T		
			10	7.5	8.5	T	T	T	T	T	T	T	T		
			13	5	7.5	T	T	T	T	T	T	T	T		
			16	5	7.5	T	T	T	T	T	T	T	T		
			20	5	6	T	T	T	T	T	T	T	T		
			25	5	6	T	T	T	T	T	T	T	T		
			32		6	7.5	T	T	T	T	T	T	T		
40		6 ¹	7.5	T	T	T	T	T	T	T					

¹ Value valid in case of Supply S. breaker only magnetic

AFDD technical details

Coordination tables: S-ARC1, S-ARC1M selectivity

MCCB@415V - S-ARC1, S-ARC1 M @230/240V

			Supply S.													XT4							
			Version													N,S,H,L,V							
			Release													TM				EL			
Load S.	Char	Icu [kA]	In[A]	20	25	32	40	50	63	80	100	125	160	200	225	250	40	63	100	160	250		
S-ARC1	B,C	7.5	6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
			10	3 ¹	3	3	3	4.5	T	T	T	T	T	T	T	T	T	3	T	T	T	T	T
			13			3 ¹	3	4.5	5	T	T	T	T	T	T	T	T	3	T	T	T	T	T
			16			3 ¹	3	4.5	5	T	T	T	T	T	T	T	T	3	T	T	T	T	T
			20			3 ¹		3	5	T	T	T	T	T	T	T	T		T	T	T	T	T
			25					3 ¹	5	6	T	T	T	T	T	T	T		T	T	T	T	T
			32					3 ¹		6	7.5	T	T	T	T	T	T		T	T	T	T	T
			40							6	7.5	T	T	T	T	T	T			T	T	T	T
S-ARC1 M	B,C	10	6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
			10	3 ¹	3	3	3	4.5	7.5	8.5	T	T	T	T	T	T	T	3	T	T	T	T	T
			13			3 ¹	3	4.5	5	7.5	T	T	T	T	T	T	T	3	T	T	T	T	T
			16			3 ¹	3	4.5	5	7.5	T	T	T	T	T	T	T	3	T	T	T	T	T
			20			3 ¹		3	5	6	T	T	T	T	T	T	T		T	T	T	T	T
			25					3 ¹	5	6	T	T	T	T	T	T	T		T	T	T	T	T
			32					3 ¹		6	7.5	T	T	T	T	T	T		T	T	T	T	T
			40							6	7.5	T	T	T	T	T	T			T	T	T	T

¹ Value valid in case of Supply S. breaker only magnetic

MCCB@415V - S-ARC1, S-ARC1 M @230/240V

			Supply S.										T1			
			Version										B,C,N			
			Release										TMD			
			Iu[A]										160			
Load S.	Char	Icu [kA]	In[A]	16	20	25	32	40	50	63	80	100	125	160		
S-ARC1	B,C	7.5	6	T	T	T	T	T	T	T	T	T	T	T		
			10			3	3	3	4.5	T	T	T	T	T		
			13					3	4.5	5	T	T	T	T		
			16					3	4.5	5	T	T	T	T		
			20					3	5	T	T	T	T	T		
			25							5	T	T	T	T		
			32								T	T	T	T	T	
			40										T	T	T	T
S-ARC1M	B,C	10	6	6	6	6	6	6	6	T	T	T	T	T		
			10			3	3	3	4.5	7.5	8.5	T	T	T	T	
			13					3	4.5	5	7.5	T	T	T	T	
			16					3	4.5	5	7.5	T	T	T	T	
			20					3	5	6	T	T	T	T	T	
			25							5	6	T	T	T	T	
			32									6	7.5	T	T	
			40										7.5	T	T	

AFDD technical details

Coordination tables: S-ARC1, S-ARC1M selectivity

S800N/S-S-ARC1 , S-ARC 1 M @230/240V

		Supply S.				S800N-S					
Load S.		Char	Icu [kA]	C							
				36-50							
			In[A]	40	50	63	80	100	125		
S-ARC1, S-ARC1M	B,C	7.5 and 10	6	0.55	1.1	1.5	2.5	3.6	5.5		
			10	0.45	1	1.3	1.9	2.8	4.2		
			13		0.75	1.1	1.6	2.3	3.6		
			16		0.75	1.1	1.6	2.3	3.6		
			20			0.9	1.4	1.9	3.3		
			25				1.2	1.6	2.7		
			32				1	1.5	2.5		
			40					1.4	2.1		

S800N/S-S-ARC1, S-ARC1 M @230/240V

		Supply S.				S800 N-S					
Load S.		Char	Icu [kA]	D							
				36-50							
			In[A]	25	32	40	50	63	80	100	125
S-ARC1	B,C	7.5	6	32	40	50	63	80	100	125	T
			10	1.3	2	3.2	3.9	T	T	T	T
			13	1.2	1.65	2.6	3.1	T	T	T	
			16	0.9	1.4	1.8	2.6	5	T	T	
			20	0.9	1.4	1.8	2.6	5	T	T	
			25		1.3	1.6	2.2	4.2	5.4	T	
			32			1.5	1.9	3.5	4.5	T	T
			40				1.8	2.8	4.2	5.5	T
S-ARC1M	B,C	10	6	0.6	1.3	2	3.2	3.9	8	T	T
			10	0.5	1.2	1.65	2.6	3.1	6.2	8.6	T
			13		0.9	1.4	1.8	2.6	5	6.3	8.8
			16		0.9	1.4	1.8	2.6	5	6.3	8.8
			20			1.3	1.6	2.2	4.2	5.4	7.6
			25				1.5	1.9	3.5	4.5	6.6
			32					1.8	2.8	4.2	5.5
			40					1.7	2.7	4	5

S750 - S-ARC, S-ARC1 M @230/240V

		Supply S.				S750					
Load S.		Char	Icu [kA]	E, K							
				25							
			In[A]	16	20	25	32	40	50	63	
S-ARC, S-ARC1M	B,C	7.5 and 10	6	T	T	T	T	T	T	T	T
			10	T	T	T	T	T	T	T	T
			13		T	T	T	T	T	T	T
			16		T	T	T	T	T	T	T
			20			T	T	T	T	T	T
			25			T	T	T	T	T	T
			32					T	T	T	T
			40						T	T	T

S750DR - S-ARC, S-ARC1 M @230/240V

		Supply S.				S750DR						
Load S.		Char	Icu [kA]	E, K								
				25								
			In[A]	16	20	25	32	40	50	63	80	100
S-ARC, S-ARC1M	B,C	7.5 and 10	6	T	T	T	T	T	T	T	T	T
			10	T	T	T	T	T	T	T	T	T
			13		T	T	T	T	T	T	T	T
			16		T	T	T	T	T	T	T	T
			20			T	T	T	T	T	T	T
			25			T	T	T	T	T	T	T
			32					T	T	T	T	T
			40						T	T	T	T

AFDD technical details

Power loss, derating and performance in altitude DS-ARC1 and DS-ARC1 M

Derating

Influence of adjacent devices	Number of devices	Correction factor				
		1	3	5	7	9
	Correction factor	1	0.95	0.92	0.9	0.9

Derating in temperature	In [A]	Temperature [°C]										
		-25	-20	-10	0	10	20	25	30	40	50	55
Max operating current depending on the ambient temperature (daily average $\leq +35$ °C) of characteristics type B and C.	6	7.9	7.8	7.7	7.3	6.9	6.3	6.1	6.0	5.9	5.8	5.7
	10	13.3	13.1	12.8	12.3	11.5	10.6	10.3	10.0	9.9	9.8	9.8
	13	17.0	16.7	16.2	15.5	14.5	13.6	13.3	13.0	12.7	12.6	12.5
	16	19.6	19.2	18.5	18.0	17.2	16.7	16.4	16.0	15.9	15.7	15.6
	20	24.3	23.8	23.2	22.3	21.4	20.7	20.3	20.0	19.8	19.5	19.3

Voltage Drop, power loss, internal resistance, own consumption	In [A]	Voltage drop [mV]	Internal resistance [mΩ]	Power loss [W]	Own consumption [W]
		6	408	68	2.5
10	183	18	1.8	0.5	
13	195	20	2.0	0.5	
16	194	12	3.1	0.5	
20	212	11	4.2	0.5	

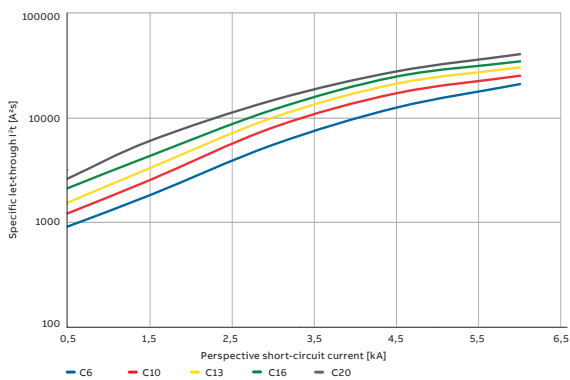
Performance in altitude	Elevation [m]	3000	4000	5000	6000
		Rated Current [A]	$0.96 \times I_n$	$0.94 \times I_n$	$0.92 \times I_n$
Rated Voltage [V]	$0.877 \times U_n$	$0.775 \times U_n$	$0.676 \times U_n$	$0.588 \times U_n$	

AFDD technical details

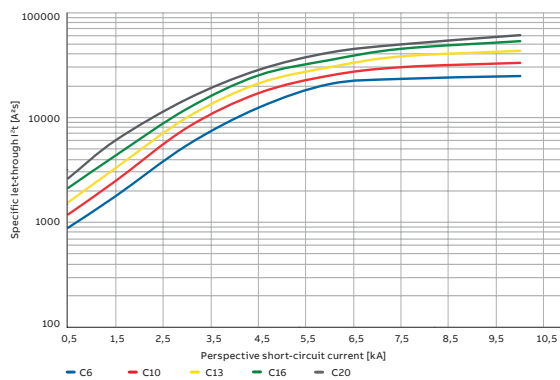
Specific let-through energy I^2t DS-ARC1 and DS-ARC1 M

— 01 I^2t
DS-ARC1
Characteristics C

— 02 I^2t
DS-ARC1 M
Characteristics C



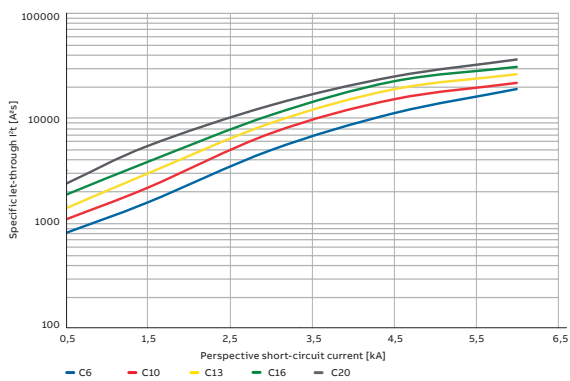
01



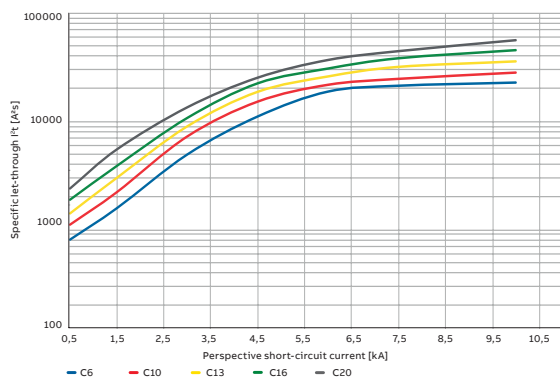
02

— 03 I^2t
DS-ARC1
Characteristics B

— 04 I^2t
DS-ARC1 M
Characteristics B



03

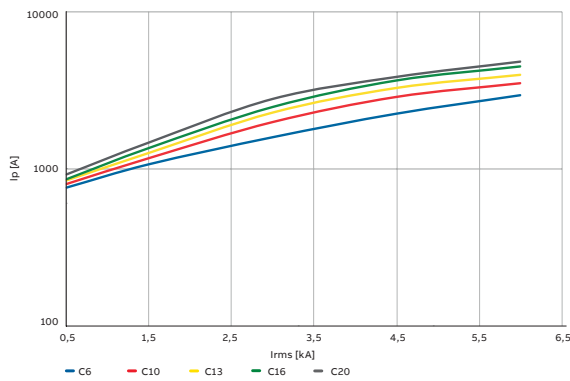


04

AFDD technical details

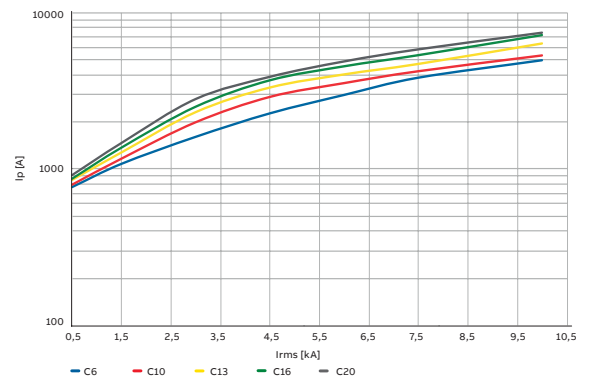
I_{peak} DS-ARC1 and DS-ARC1 M

01 I_{peak}
DS-ARC1,
Characteristic C



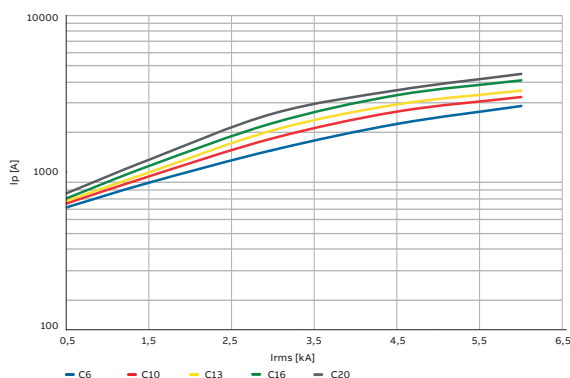
01

02 I_{peak}
DS-ARC1 M
Characteristics C



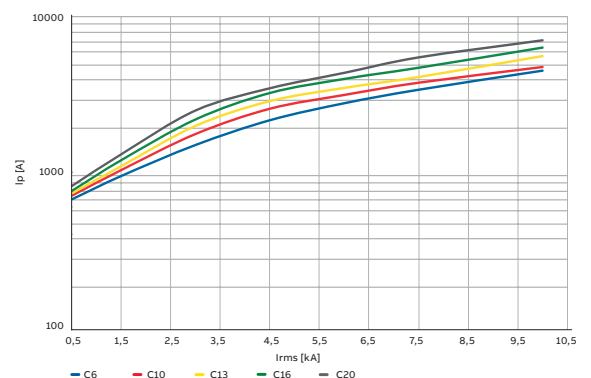
02

03 I_{peak}
DS-ARC1
Characteristics B



03

04 I_{peak}
DS-ARC1 M
Characteristics B



04

AFDD technical details

Coordination tables: DS-ARC1, DS-ARC1 M back-up

S800C - DS-ARC1, DS-ARC1 M@ 230/240V

Supply S.		S800C									
Char		B,C,D,K									
Load S.	Icu [kA]	25									
DS-ARC1	B,C	7.5	In[A]	25	32	40	50	63	80	100	125
			6...16	25	25	25	25	18	15	15	15
			20	-	25	25	25	18	15	15	15
DS-ARC1M	B,C	10	In[A]	25	25	25	25	25	25	25	25
			6...16	25	25	25	25	25	25	25	25
			20	-	25	25	25	25	25	25	25

S800B - DS-ARC1, S-ARC M@ 230/240V

Supply S.		S800B									
Char		B,C,D,K									
Load S.	Icu [kA]	25									
DS-ARC1	B,C	7.5	In[A]	32	40	50	63	80	100	125*	
			6...20	16	16	16	16	15	15	15	
DS-ARC1M	B,C	10	6...20	16	16	16	16	16	16	16	

*Only S800B B,C

S200 - DS-ARC1, DS-ARC1 M@230/240V

Supply S.		S200		S200M		S200P		S200P	
Char		B-C		B,C		B,C		B,C	
Load S.	Icu [kA]	20		25		40		25	
DS-ARC1	B,C	7.5 and	In[A]	0.5..63	0.5...63	0.5...25	32		
		10	6...20	20	25	40	25		

DS201 - DS-ARC1, DS-ARC1 M @230/240V

Supply S.		DS201								
Char		B,C								
Load S.	In[A]	2...40								
DS-ARC1	B,C	6...20	Icu [kA]	10						
			7.5 and 10	10						

AFDD technical details

Coordination tables: DS-ARC1, DS-ARC1 M selectivity

Fuse gL/gG- DS-ARC1, S-ARC M @ 230/400V

Load S.	Char	Supply S.	Fuse gL/gG								
		Icu [kA]	In [A]	25	32	40	50	63	80	100	125
DS-ARC1	B,C	7.5	6	1	1.5	4	4.5	T	T	T	T
			10		1.2	3.5	4	T	T	T	T
			13		1	3	3.5	5	T	T	T
			16		1	3	3.5	5	T	T	T
			20		1	3	3.5	5	T	T	T
DS-ARC1M	B,C	10	6	1	1.5	4	4.5	7	T	T	T
			10		1.2	3.5	4	6	T	T	T
			13		1	3	3.5	5	T	T	T
			16		1	3	3.5	5	T	T	T
			20		1	3	3.5	5	8	T	T

MCCB@415V - DS-ARC1, DS-ARC1 M @230/240V

Load S.	Char	Icu [kA]	Supply S.							XT1					
			In [A]	Version						B,C,N,S,H					
				Release						TM					
				16	20	25	32	40	50	63	80	100	125	160	
DS-ARC1	B,C	7.5	6	T	T	T	T	T	T	T	T	T	T	T	T
			10			3	3	3	4.5	T	T	T	T	T	
			13					3	4.5	5	T	T	T	T	
			16					3	4.5	5	T	T	T	T	
			20					3	5	T	T	T	T		
DS-ARC1M	B,C	10	6	6	6	6	6	6	6	T	T	T	T	T	
			10			3	3	3	4.5	7.5	8.5	T	T	T	
			13					3	4.5	5	7.5	T	T	T	
			16					3	4.5	5	7.5	T	T	T	
			20					3	5	6	T	T	T		

MCCB@415V - DS-ARC1, DS-ARC1 M @230/240V

Load S.	Char	Icu [kA]	Supply S.							XT2									
			In [A]	Version						N,S,H,L,V									
				Release						TM					EL				
				16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160
DS-ARC1	B,C	7.5	6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			10		3 ¹	3	3	3	4.5	T	T	T	T	T		T	T	T	T
			13				3 ¹	3	4.5	5	T	T	T	T			T	T	T
			16				3 ¹	3	4.5	5	T	T	T	T			T	T	T
			20				3 ¹		3	5	T	T	T	T			T	T	T
DS-ARC1M	B,C	10	6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
			10		3 ¹	3	3	3	4.5	7.5	8.5	T	T	T		T	T	T	T
			13				3 ¹	3	4.5	5	7.5	T	T	T			T	T	T
			16				3 ¹	3	4.5	5	7.5	T	T	T			T	T	T
			20				3 ¹		3	5	6	T	T	T			T	T	T

¹ Value valid in case of Supply S. breaker only magnetic

AFDD technical details

Coordination tables: DS-ARC1, DS-ARC1 M selectivity

MCCB@415V - DS-ARC1. DS-ARC1 M @230/240V

			Supply S.		XT3					
			Version		N,S					
			Release		TM					
Load S.	Char	Icu [kA]	In[A]	63	80	100	125	160	200	250
DS-ARC1	B.C	7.5	6	T	T	T	T	T	T	T
			10	T	T	T	T	T	T	T
			13	5	T	T	T	T	T	T
			16	5	T	T	T	T	T	T
			20	5	T	T	T	T	T	T
DS-ARC1M	B.C	10	6	T	T	T	T	T	T	T
			10	7.5	8.5	T	T	T	T	T
			13	5	7.5	T	T	T	T	T
			16	5	7.5	T	T	T	T	T
			20	5	6	T	T	T	T	T

MCCB@415V - DS-ARC1, DS-ARC1 M @230/240V

			Supply S.		XT4																	
			Version		N,S,H,L,V																	
			Release		TM											EL						
Load S.	Char	Icu [kA]	In[A]	20	25	32	40	50	63	80	100	125	160	200	225	250	40	63	100	160	250	
DS-ARC1	B,C	7.5	6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			10	3 ¹	3	3	3	4.5	T	T	T	T	T	T	T	T	T	3	T	T	T	T
			13			3 ¹	3	4.5	5	T	T	T	T	T	T	T	T	3	T	T	T	T
			16			3 ¹	3	4.5	5	T	T	T	T	T	T	T	T	3	T	T	T	T
			20			3 ¹	3	5	T	T	T	T	T	T	T	T	T		T	T	T	T
DS-ARC1M	B,C	10	6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			10	3 ¹	3	3	3	4.5	7.5	8.5	T	T	T	T	T	T	T	3	T	T	T	T
			13			3 ¹	3	4.5	5	7.5	T	T	T	T	T	T	T	3	T	T	T	T
			16			3 ¹	3	4.5	5	7.5	T	T	T	T	T	T	T	3	T	T	T	T
			20			3 ¹	3	5	6	T	T	T	T	T	T	T	T		T	T	T	T

¹ Value valid in case of Supply S. breaker only magnetic

AFDD technical details

Coordination tables: DS-ARC1, DS-ARC1 M selectivity

MCCB@415V - DS-ARC1, DS-ARC1 M @230/240V

			Supply S.										T1			
			Version										B,C,N			
			Release										TMD			
			Iu[A]										160			
Load S.	Char	Icu [kA]	In[A]	16	20	25	32	40	50	63	80	100	125	160		
DS-ARC1	B,C	7.5	6	T	T	T	T	T	T	T	T	T	T	T		
			10			3	3	3	4.5	T	T	T	T	T		
			13					3	4.5	5	T	T	T	T		
			16					3	4.5	5	T	T	T	T		
			20					3	5	T	T	T	T	T		
DS-ARC1M	B,C	10	6	6	6	6	6	6	6	T	T	T	T	T		
			10			3	3	3	4.5	7.5	8.5	T	T	T		
			13					3	4.5	5	7.5	T	T	T		
			16					3	4.5	5	7.5	T	T	T		
			20					3	5	6	T	T	T			

MCCB@415V - DS-ARC1, DS-ARC1 M @230/240V

			Supply S.										T2							
			Version										N,S,H,L							
			Release										TMD				EL			
			Iu[A]										160				160			
Load S.	Char	Icu [kA]	In[A]	16	20	25	32	40	50	63	80	100	125	160	25	63	100	160		
DS-ARC1	B,C	7.5	6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
			10		3	3	3	3	4.5	T	T	T	T	T	T	T	T	T		
			13				3	3	4.5	5	T	T	T	T		T	T	T		
			16				3	3	4.5	5	T	T	T	T		T	T	T		
			20				3		3	5	T	T	T	T		T	T	T		
DS-ARC1M	B,C	10	6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
			10		3	3	3	3	4.5	7.5	8.5	T	T	T	T	T	T	T		
			13				3	3	4.5	5	7.5	T	T	T		T	T	T		
			16				3	3	4.5	5	7.5	T	T	T		T	T	T		
			20				3		3	5	6	T	T	T		T	T	T		

AFDD technical details

Coordination tables: DS-ARC1, DS-ARC1 M selectivity

MCCB@415V - DS-ARC1@230/240V

			Supply S.					T3		
			Version					N,S		
			Release					TMD, MA		
			Iu[A]					250		
Load S.	Char	Icu [kA]	In[A]	63	80	100	125	160	200	250
DS-ARC1	B,C	7.5	6	T	T	T	T	T	T	T
			10	T	T	T	T	T	T	T
			13	5	T	T	T	T	T	T
			16	5	T	T	T	T	T	T
			20	5	T	T	T	T	T	T
DS-ARC1 M	B,C	10	6	T	T	T	T	T	T	T
			10	7.5	8.5	T	T	T	T	T
			13	5	7.5	T	T	T	T	T
			16	5	7.5	T	T	T	T	T
			20	5	6	T	T	T	T	T

S800N/S - DS-ARC1, S- ARC 1 M @230/240V

			Supply S.			S800N-S					
			Char			B					
Load S.	Char	Icu [kA]	36-50								
			In[A]	50	63	80	100	125			
DS-ARC1, DS-ARC1M	B,C	7.5 and 10	6	0.6	1.2	1.6	2.6	3.8			
			10	0.5	1.1	1.4	2	3			
			13		0.8	1.2	1.7	2.5			
			16		0.8	1.2	1.7	2.5			
			20			1	1.5	2.1			

S800N/S-DS-ARC1, S-ARC 1 M @230/240V

			Supply S.			S800N-S					
			Char			C					
Load S.	Char	Icu [kA]	36-50								
			In[A]	40	50	63	80	100	125		
DS-ARC1, DS-ARC1M	B,C	7.5 and 10	6	0.55	1.1	1.5	2.5	3.6	5.5		
			10	0.45	1	1.3	1.9	2.8	4.2		
			13		0.75	1.1	1.6	2.3	3.6		
			16		0.75	1.1	1.6	2.3	3.6		
			20			0.9	1.4	1.9	3.3		

S800N/S-DS-ARC1, DS-ARC1 M @230/240V

			Supply S.			S800 N-S					
			Char			D					
Load S.	Char	Icu [kA]	36-50								
			In[A]	25	32	40	50	63	80	100	125
DS-ARC1	B,C	7.5	6	0.6	1.3	2	3.2	3.9	T	T	T
			10	0.5	1.2	1.65	2.6	3.1	T	T	T
			13		0.9	1.4	1.8	2.6	5	T	T
			16		0.9	1.4	1.8	2.6	5	T	T
			20			1.3	1.6	2.2	4.2	5.4	T
DS-ARC1M	B,C	10	6	0.6	1.3	2	3.2	3.9	8	T	T
			10	0.5	1.2	1.65	2.6	3.1	6.2	8.6	T
			13		0.9	1.4	1.8	2.6	5	6.3	8.8
			16		0.9	1.4	1.8	2.6	5	6.3	8.8
			20			1.3	1.6	2.2	4.2	5.4	7.6