MS116-6.3

Products Low Voltage Products and Systems Circuit Breakers Manual Motor Starters

Products Low Voltage Products and Systems Control Products Manual Motor Starters Manual Motor Starters

Parts & Services Drives Medium voltage AC drives Industrial drives ACS2000

Parts & Services Drives Medium voltage AC drives Special purpose drives ACS1000

General Information

Extended Product Type:	MS116-6.3
Product ID:	1SAM250000R1009
EAN:	4013614320323
Catalog Description:	MS116-6.3 Manual Motor Starter
Long Description:	The MS116-6.3 manual motor starter is a compact 45 mm width devices with a rated operational current of Ie = 6.3 A. This device is used to manually switch on and off motors and to protect them reliably and without the need for a fuse from short-circuits, overload and phase failures. The manual motor starter offers a rated service short-circuit breaking capacity Ics = 50 kA at 400 VAC and the trip class 10A. Further features are the build-in disconnect function, temperature compensation, trip-free mechanism and a rotary handle with a clear switch position indication. The manual motor starter is suitable for three- and single-phase applications. Auxiliary contacts, signalling contacts, undervoltage releases, shunt trips, 3-phase bus bars, power in-feed blocks and locking devices for protection against unauthorized changes are available as accessory.

Additional Information

ABS Certificate:	1SAA963000-0104
Actuator Type:	Rotary Handle
Ambient Air Temperature:	Around the Enclosure 0 ... +40 °C Operation -25 ... +70 °C Operation Compensated -25 ... +55 °C Storage -50 ... +80 °C
Ambient Air Temperature Compensation:	Yes
Ampere Rating UL/CSA:	6.3 A
BV Certificate:	1SAA963000-0204
CB Certificate:	1SAA963000-2003
CCC Certificate:	1SAA963000-3804
Connecting Capacity Main Circuit UL/CSA:	Flexible 1/2x 16-12 AWG Stranded 1/2x 16-12 AWG
Connecting Capacity Main Circuit:	Flexible with Ferrule 1/2x 0.75 ... 2.5 mm² Flexible with Insulated Ferrule 1/2x 0.75 ... 2.5 mm² Flexible 1/2x 0.75 ... 2.5 mm² Rigid 1/2x 1 ... 4 mm²
Contact Position Indication:	ON / OFF
Conventional Free-air Thermal Current (I_{th}):	Main Circuit 6.3 A
Core Credit:	0.00
Country of Origin:	Germany (DE)
Customs Tariff Number:	85362010
DNV Certificate:	1SAA963000-0303
Data Sheet, Technical Information:	2CDC131025D0201
Data Sheet, Technical Information (Part 2):	1SAM200505F0009
Data Sheet, Technical Information (Part 3):	1SAM200507F0001 1SAM200507F0002 1SAM200507F0003 1SAM200508F0001

	1SAM200508F0002 1SAM200508F0003
Declaration of Conformity - CE:	1SAD938517-0060
Degree of Protection:	Housing IP20 Main Circuit Terminals IP10
Dimension Diagram:	1SAM200422F0001
E-nummer:	3111946
EAC Certificate:	1SAA963000-2701
EAN:	4013614320323
EPLAN Catalog Tree:	Electrical engineering / Protection devices / Motor overload switch
EPLAN Function Definition:	Motor overload switch / Motor overload switch, 6 connection points / Motor overload switch thr ee-pole 1_2_3_4_5_6
ETIM 4:	EC000074 - Motor protective circuit-breaker
ETIM 5:	EC000074 - Motor protective circuit-breaker
ETIM 6:	EC000074 - Motor protection circuit-breaker
Electrical Durability:	100000 cycle
Environmental Information:	1SAA963001-2401
GL Certificate:	1SAA963000-0402
GOST Certificate:	1SAA963001-2702
General Use Rating UL/CSA:	(600 V AC) 6.3 A
Horsepower Rating UL/CSA:	(220 ... 240 V AC) Three Phase 1.5 Hp (440 ... 480 V AC) Three Phase 3 Hp (550 ... 600 V AC) Three Phase 5 Hp
IIT Publishing Status:	Level 0 - Information enabled
Industrial IT Certification Level:	0
Instructions and Manuals:	2CDC131011M6802
Invoice Description:	MS116-6.3 Manual Motor Starter Trip class 10A, 4.0 ... 6.3A
LR Certificate:	1SAA963000-0505
Maximum Operating Altitude Permissible:	2000 m
Maximum Operating Voltage UL/CSA:	Main Circuit 600 V AC
Mechanical Durability:	100000 cycle
Minimum Order Quantity:	1 piece
Mounting Position:	Position 1 to 6
Mounting on DIN Rail:	TH35-15 (35 x 15 mm Mounting Rail) acc. to IEC 60715 TH35-7.5 (35 x 7.5 mm Mounting Rail) acc. to IEC 60715
Number of Poles:	3
Number of Protected Poles:	3
Object Classification Code:	F
Package Level 1 EAN:	4013614320323
Package Level 1 Gross Weight:	0.28 kg
Package Level 1 Height:	50 mm
Package Level 1 Length:	95 mm
Package Level 1 Units:	1 piece
Package Level 1 Width:	92 mm
Package Level 2 EAN:	4013614408694
Package Level 2 Gross Weight:	11.586 kg
Package Level 2 Height:	210 mm
Package Level 2 Length:	395 mm
Package Level 2 Units:	40 piece
Package Level 2 Width:	280 mm
Part Type:	N

Part Type:	New
Phase Loss Sensitive:	Yes
Pollution Degree:	3
Power Loss:	at Rated Operating Conditions per Pole 0.7 ... 1.8 W
Product Main Type:	MS116
Product Name:	Manual Motor Starter
Product Net Depth:	85.6 mm
Product Net Height:	90 mm
Product Net Weight:	0.265 kg
Product Net Width:	45 mm
RMRS Certificate:	1SAA918000-0704
Rated Current (I_n):	6.3 A
Rated Frequency (f):	Main Circuit 50 Hz Main Circuit 60 Hz
Rated Impulse Withstand Voltage (U_{imp}):	Main Circuit 6 kV
Rated Instantaneous Short-Circuit Current Setting (I_i):	78.8 A
Rated Insulation Voltage (U_i):	690 V
Rated Operational Current (I_e):	6.3 A
Rated Operational Current AC-3 (I_e):	6.3 A
Rated Operational Power AC-3 (P_e):	(400 V) Three Phase 2.2 kW
Rated Operational Voltage:	Main Circuit 690 V AC
Rated Service Short-Circuit Breaking Capacity (I_{cs}):	(230 V AC) 50 kA (400 V AC) 50 kA (440 V AC) 6 kA (500 V AC) 6 kA (690 V AC) 2 kA
Rated Service Short-Circuit Breaking Capacity, in %of Icu (I_{cs}):	100 %
Rated Ultimate Short-Circuit Breaking Capacity (I_{cu}):	(230 V AC) 50 kA (400 V AC) 50 kA (440 V AC) 6 kA (500 V AC) 6 kA (690 V AC) 2 kA
Rated Uninterrupted Current (I_u):	6.3 A
Recommended Screw Driver:	Pozidriv 2
Resistance to Shock acc. to IEC 60068-2-27:	11 ms Pulse 25g
Resistance to Vibrations acc. to IEC 60068-2-6:	5g / 3 ... 150 Hz
RoHS Date:	1105
RoHS Information:	1SAD938517-0060
RoHS Status:	Following EU Directive 2011/65/EC
Selectivity Category:	A
Selling Unit of Measure:	piece
Setting Range:	4 ... 6.3 A
Short Description:	MS116-6.3 Manual Motor Starter
Short-Circuit Protective Devices:	gG Type Fuses 40 A, 690 V AC gG Type Fuses 63 A, 440 V AC gG Type Fuses 63 A, 500 V AC
Standards:	IEC/EN 60947-1 IEC/EN 60947-2 IEC/EN 60947-4-1 UL 60947-1

	UL 60947-1 UL 60947-4-1
Suitable for Isolation:	Yes
Terminal Type:	Screw Terminals
Tightening Torque:	Main Circuit 0.8 ... 1.2 N·m
Tightening Torque UL/CSA:	Main Circuit 10 in·lb
Trip Class:	10A
UL Certificate:	UL_E137861
UNSPSC:	39121521
Utilization:	Motor Protection
Wire Stripping Length:	Main Circuit 9 mm
cUL Certificate:	cUL_E137861
eClass:	7.0 27370401
DNV GL Certificate:	1SAA963000-0303
KC Certificate:	1SAA963000-1501

Where Used (as a spare part for "Products")

2 Products Filter

Identifier	Description	Qty	Unit Of Measure
ACS 1000	No Description Available	1	piece
ACS 2000	No Description Available	1	piece

Product specific part data

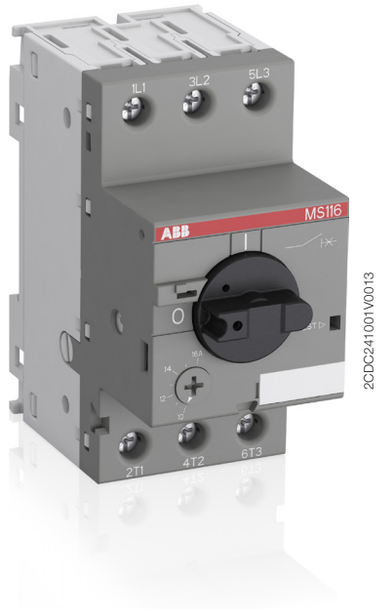
2 Products Filter

Product	Category	Drive Part Category
ACS 2000	ACS2000	Switches, Relays, Contactors
ACS 1000	ACS1000	Switches, Relays, Contactors

Data sheet

Manual motor starter MS116

Manual motor starters are electro-mechanical protection devices for the main circuit. They are used mainly to switch motors manually ON/OFF and protect them fuse less against short-circuit, overload and phase failures.
Fuse less protection with a manual motor starter saves costs, space and ensures a quick reaction under short-circuit condition, by switching off the motor within milliseconds. Fuse less starter combinations are setup together with contactors.



Description

- Overload protection – trip class 10A
- Phase loss sensitivity
- Disconnect function
- Temperature compensation from -25 … +55 °C
- Adjustable current setting for overload protection
- Suitable for three- and single-phase application
- Trip-free mechanism
- Clear switch position indication ON/OFF

Order data

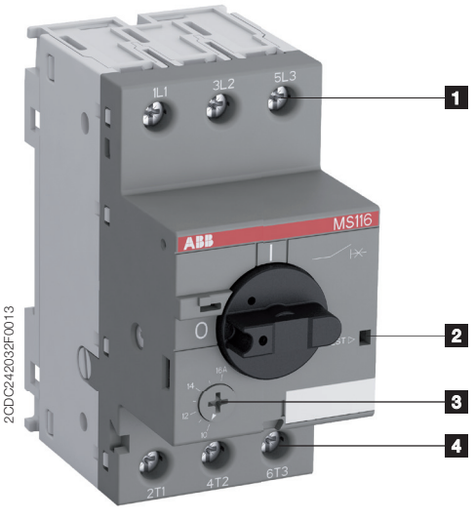
MS116 screw terminal



Setting range	Type	Trip class	Order code	Packing unit	Weight per PCE
A				PCE	kg
0.10...0.16	MS116-0.16	10A	1SAM250000R1001	1	0.225
0.16...0.25	MS116-0.25	10A	1SAM250000R1002	1	0.225
0.25...0.40	MS116-0.4	10A	1SAM250000R1003	1	0.225
0.40...0.63	MS116-0.63	10A	1SAM250000R1004	1	0.225
0.63...1.00	MS116-1.0	10A	1SAM250000R1005	1	0.225
1.00...1.60	MS116-1.6	10A	1SAM250000R1006	1	0.265
1.60...2.50	MS116-2.5	10A	1SAM250000R1007	1	0.265
2.50...4.00	MS116-4.0	10A	1SAM250000R1008	1	0.265
4.00...6.30	MS116-6.3	10A	1SAM250000R1009	1	0.265
6.30...10.0	MS116-10	10A	1SAM250000R1010	1	0.265
8.00...12.0	MS116-12	10A	1SAM250000R1012	1	0.265
10.0...16.0	MS116-16	10A	1SAM250000R1011	1	0.265
16.0...20.0	MS116-20	10A	1SAM250000R1013	1	0.310
20.0...25.0	MS116-25	10A	1SAM250000R1014	1	0.310
25.0...32.0	MS116-32	10A	1SAM250000R1015	1	0.310

Note: MS116 with pre-assembled auxiliary contact HKF1-11, please order as follow 1SAM250005Rxxxx

Functional description



1 Terminals 1L1, 3L2, 5L3

2 Test function

3 Current setting range / Adjustable current setting for overload protection

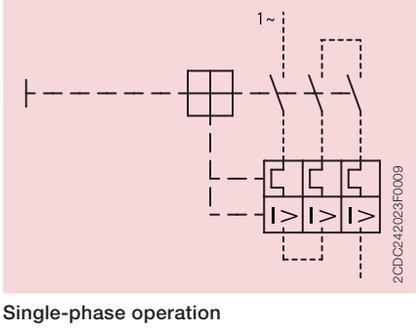
4 Terminals 2T1, 4T2, 6T3

Application

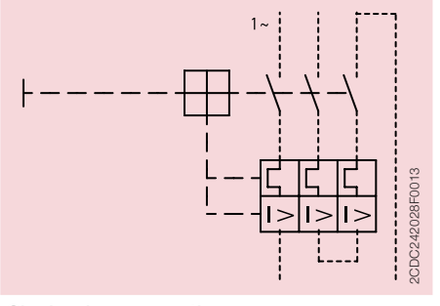
The manual motor starters protect the load and the installation against short-circuit and overload. They are three pole protection devices with thermal tripping elements for overload protection and electromagnetic tripping elements for short-circuit protection. Furthermore, they provide a disconnect function for safely isolation of the installation and the supply and can be used for the manual switching of loads.

The manual motor starters have a setting scale in amperes, which allows the direct adjusting of the device without any additional calculation. In compliance with international and national standards, the setting current is the rated current of the motor and not the tripping current (no tripping at 1.05 x I, tripping at 1.2 x I; I = setting current).

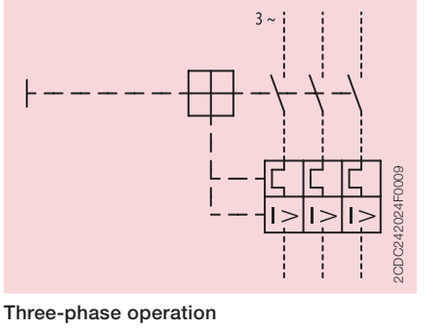
Operation mode



Single-phase operation

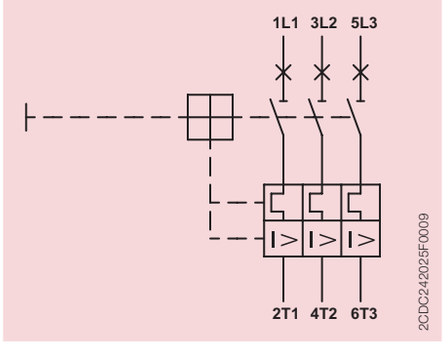


Single-phase operation



Three-phase operation

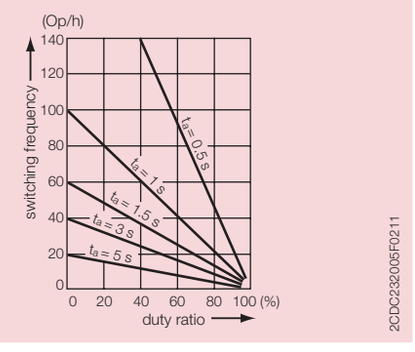
Wiring diagram



Resistance and power loss per pole

Type	Setting range		Resistance per pole	Power loss per pole	
	lower value A	upper value A	 Ω	at lower value W	at upper value W
MS116-0.16	0.10	0.16	66.00	0.7	1.7
MS116-0.25	0.16	0.25	25.50	0.7	1.7
MS116-0.4	0.25	0.40	10.38	0.7	1.7
MS116-0.63	0.40	0.63	4.36	0.7	1.7
MS116-1.0	0.63	1.00	1.605	0.7	1.7
MS116-1.6	1.00	1.60	0.648	0.7	1.7
MS116-2.5	1.60	2.50	0.272	0.7	1.7
MS116-4.0	2.50	4.00	0.114	0.7	1.8
MS116-6.3	4.00	6.30	0.046	0.7	1.7
MS116-10	6.30	10.0	0.024	0.9	2.4
MS116-12	8.00	12.0	0.016	1.0	2.3
MS116-16	10.0	16.0	0.011	1.1	2.8
MS116-20	16.0	20.0	0.0057	1.5	2.3
MS116-25	20.0	25.0	0.0045	1.8	2.8
MS116-32	25.0	32.0	0.0030	1.9	3.1

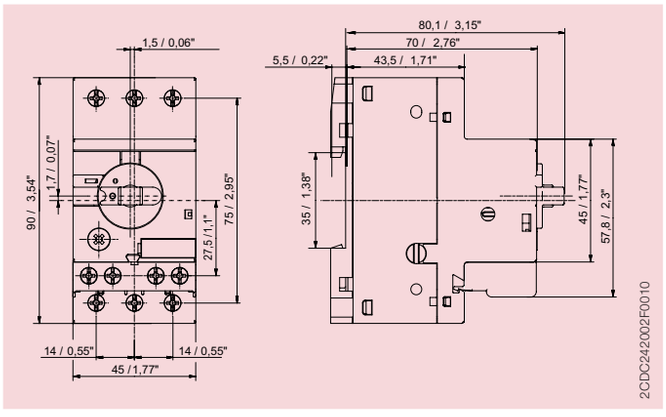
Technical diagram



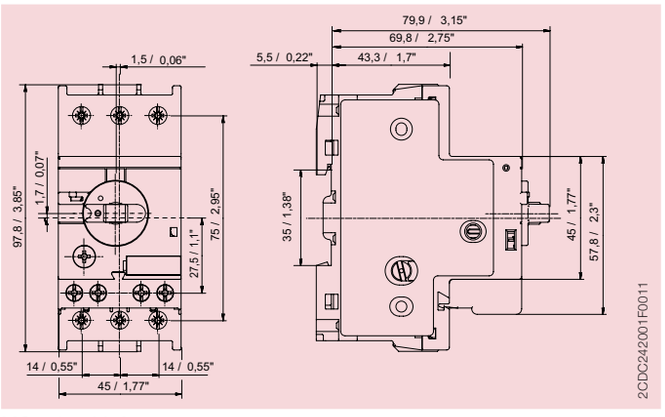
Intermittent periodic duty, t_a: Motor starting time

Dimensions

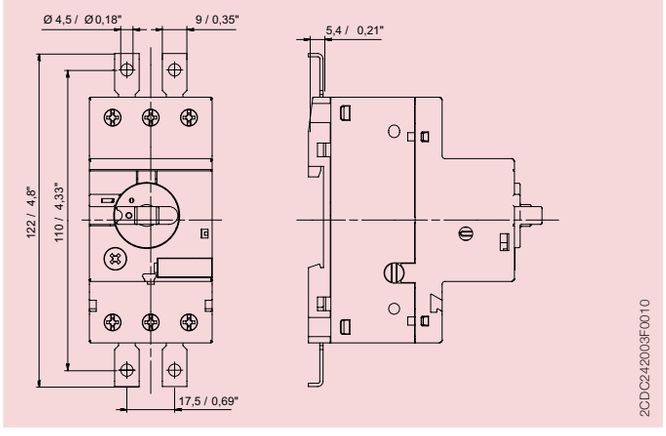
in **mm** / *inches*



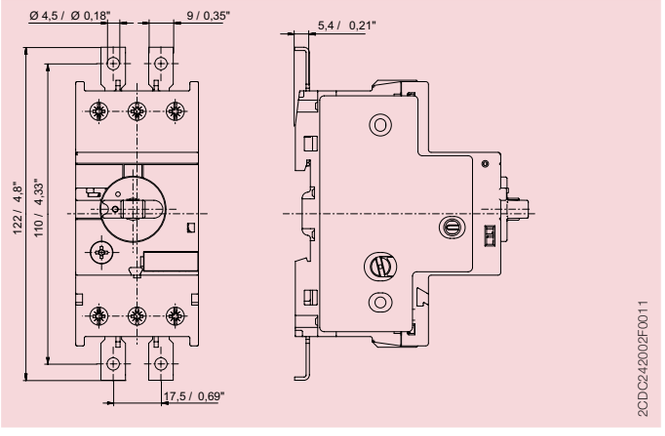
MS116 ≤ 16 A



MS116 ≥ 20 A

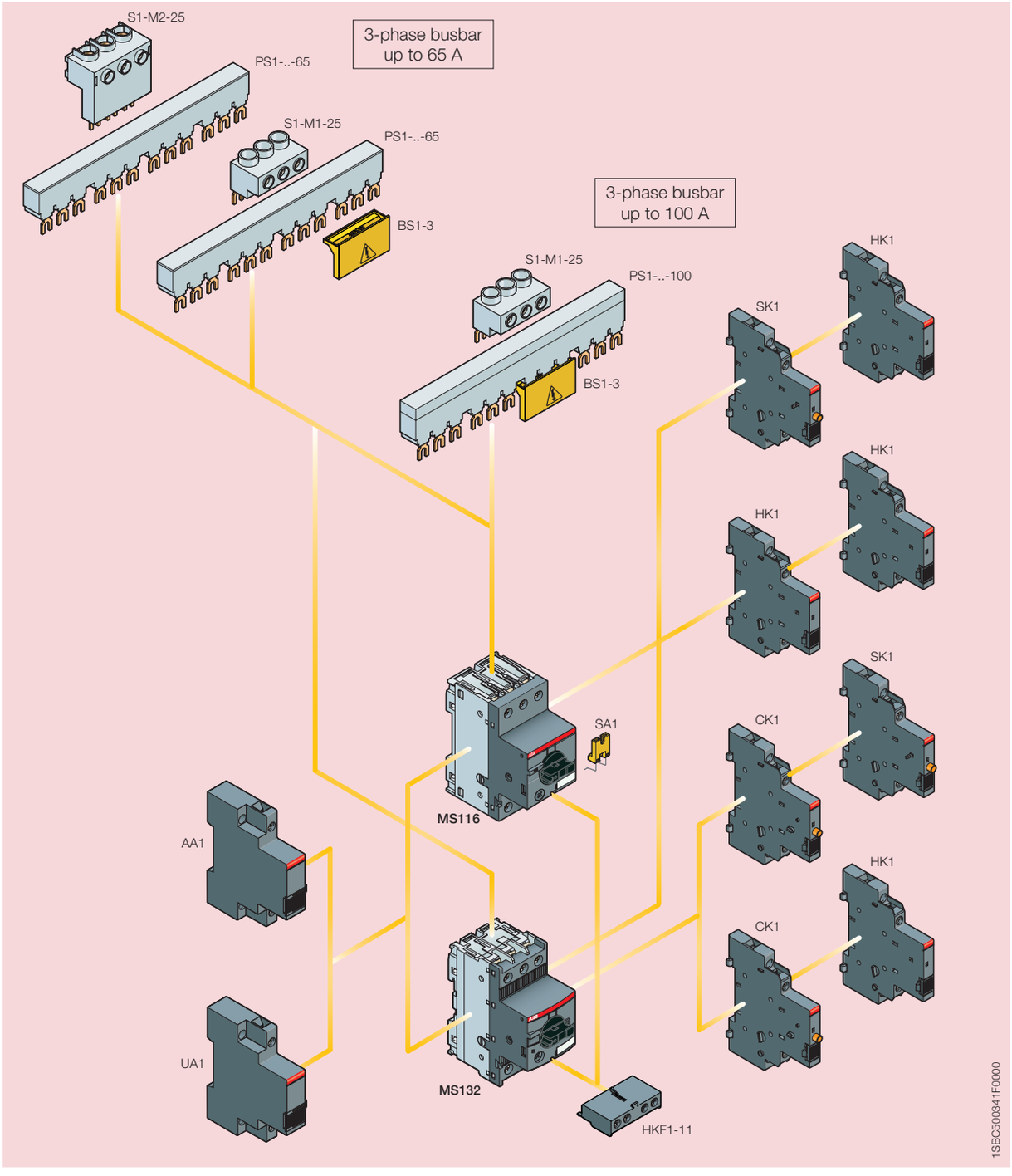


MS116 ≤ 16 A with screw fixing kit FS116 (accessory)



MS116 ≥ 20 A with screw fixing kit FS116 (accessory)

Main accessories for manual motor starter



Technical data IEC/EN

Data at T_A = 40 °C and at rated values, if nothing else indicated

Main circuit

	1L1-3L2-5L3 2T1-4T2-6T3
Rated operational voltage U_e	690 V AC - V DC
Setting range - thermal overload protection	see table “Order data” on page 1
Rated operational current I_e	see table below
Rated instantaneous short-circuit current setting I_i	see table below
Rated service short-circuit breaking capacity I_{cs}	see table “Short-circuit breaking capacity and back-up fuses” on page 8
Rated ultimate short-circuit breaking capacity I_{cu}	
Trip class	see table “Order data” on page 1
Rated frequency	50/60 Hz
Number of poles	3
Resistance per pole	see table “Resistance and power loss per pole” on page 3
Power loss per pole	

Isolation data	
Rated impulse withstand voltage U_{imp}	6 kV
Rated insulation voltage U_i	690 V
Pollution degree	3

Electrical connection		MS116 ≤ 16 A	MS116 ≥ 20 A
Connecting capacity	solid	1/2 x 1 ... 4 mm²	1/2 x 1 ... 2.5 mm² 1/2 x 2.5 ... 6 mm²
	stranded	1/2 x 1 ... 4 mm²	1/2 x 1 ... 2.5 mm² 1/2 x 2.5 ... 6 mm²
	flexible with ferrule	1/2 x 0.75 ... 2.5 mm²	1/2 x 0.75 ... 6 mm²
	flexible with insulated ferrule	1/2 x 0.75 ... 2.5 mm²	1/2 x 0.75 ... 6 mm²
	flexible without ferrule	1/2 x 0.75 ... 2.5 mm²	1/2 x 1 ... 2.5 mm² 1/2 x 2.5 ... 6 mm²
Stripping length		9 mm	10 mm
Tightening torques		0.8 ... 1.2 Nm	2 Nm
Connection screw		M3.5 (Pozidriv 2 / 5.5 mm)	M4 (Pozidriv 2 / 6.5 mm)

Type	Rated instantaneous short-circuit current setting I_i A	Rated operational current I_e A
MS116-0.16	1.56	0.16
MS116-0.25	2.44	0.25
MS116-0.4	3.90	0.40
MS116-0.63	6.14	0.63
MS116-1.0	11.50	1.0
MS116-1.6	18.40	1.6
MS116-2.5	28.75	2.5
MS116-4.0	50.00	4.0
MS116-6.3	78.75	6.3
MS116-10	150	10
MS116-12	180	12
MS116-16	240	16
MS116-20	300	20
MS116-25	375	25
MS116-32	480	32

General data

Mechanical durability		100000
Electrical durability	MS116 ≤ 16 A	100000
	MS116 ≥ 20 A	50000
Duty time		100 %
Operating frequency without early tripping		up to 15 operations/h or 60 operations/h with 40 % duty ratio, if the motor breaking current 6 x I_n and the motor starting time does not exceed 1 s
Dimensions (W x H x D)		see drawing on page 6
Weight		see table “Order data” on page 1
Mounting		DIN-rail (EN 60715)
Mounting positions		position 1-6 (optional for single mounting)
Group mounting		on request
Minimum distance to other units same type	horizontal	0 mm
	vertical	150 mm
Minimum distance to electrical conductive board	horizontal, up to 400 V	0 mm
	horizontal, up to 690 V	> 1.5 mm
	vertical	75 mm
Degree of protection	housing / main circuit terminals	IP20
Utilization category		A
Maximum operating altitude		up to 2000 m
Maximum operating frequency		170 cycles/h

Electromagnetic compatibility

Electromagnetic compatibility		not applicable

Environmental data

Ambient air temperature		
Operation	open - compensated	-25 ... +55 °C
	open	-25 ... +70 °C
	enclosed (IB132)	0 ... +40 °C
Storage		-50 ... +80 °C
Ambient air temperature compensation		acc. to IEC/EN 60947-4-1
Vibration (sinusoidal) acc. to IEC/EN 60068-2-6 (Fc)		5g / 3 ... 150 Hz
Shock (half-sine) acc. to IEC/EN 60068-2-27 (Ea)		25g / 11 ms

Standards / directives

Product standard	IEC/EN 60947-1 IEC/EN 60947-2 IEC/EN 60947-4-1 UL 60947-1 UL 60947-4-1
Low Voltage Directive	2006/95/EC
EMC Directive	2004/108/EC
RoHS Directive	2002/95/EC

Short-circuit breaking capacity and back-up fuses

I_{cs} Rated service short-circuit breaking capacity

I_{cu} Rated ultimate short-circuit breaking capacity

I_{cc} Prospective short-circuit current at installation location

Note: Maximum rated current of the back-up fuses if $I_{cc} > I_{cs}$

Type	230 V AC			400 V AC			440 V AC			500 V AC			690 V AC		
	I_{cs} kA	I_{cu} kA	gG, aM A	I_{cs} kA	I_{cu} kA	gG, aM A	I_{cs} kA	I_{cu} kA	gG, aM A	I_{cs} kA	I_{cu} kA	gG, aM A	I_{cs} kA	I_{cu} kA	gG, aM A
MS116-0.16	No back-up fuse required up to I_{cc} = 50 kA									No back-up fuse required up to I_{cc} = 30 kA					
MS116-0.25															
MS116-0.4															
MS116-0.63															
MS116-1.0															
MS116-1.6															
MS116-2.5							10	10	25	10	10	25	5	5	25
MS116-4.0							6	6	25	6	6	25	2	2	25
MS116-6.3							6	6	63	6	6	63	2	2	40
MS116-10							6	6	63	6	6	63	2	2	50
MS116-12	25	25	80	25	25	80	6	6	63	6	6	63	2	2	50
MS116-16	16	16	80	16	16	80	6	6	63	4	4	63	2	2	63
MS116-20	10	15	125	10	15	125	3	6	125	3	4	125	2	2	80
MS116-25	10	15	125	10	15	125	3	6	125	3	4	125	2	2	100
MS116-32	10	10	125	10	10	125	3	6	125	3	4	125	2	2	100

Technical data UL/CSA

Main circuit

Maximum operational voltage		600 V
Manual Motor Controller ratings		see table “UL 508 — Manual Motor Controller” on page 10
Motor ratings	Horse power	see table below
	Full load amps (FLA)	see table below
	Locked rotor amps (LRA)	see table below

Electrical connection		MS116 ≤ 16 A	MS116 ≥ 20 A
Connecting capacity	stranded	1/2 x AWG 16 ... 12	1/2 x AWG 16 ... 8
	flexible without ferrule	1/2 x AWG 16 ... 12	1/2 x AWG 16 ... 8
Stripping length		9 mm	10 mm
Tightening torques		10 ... 12 lb-In	18 lb-In
Connection screw		M3.5 (Pozidriv 2)	M4 (Pozidriv 2)

Motor rating, single phase

hp Horse power

FLA Full load amps

LRA Locked rotor amps

Type	120 VAC			220-240 VAC		
	hp	FLA	LRA	hp	FLA	LRA
MS116-0.16	-	0.16	0.96	-	0.16	0.96
MS116-0.25	-	0.25	1.5	-	0.25	1.5
MS116-0.4	-	0.4	2.4	-	0.4	2.4
MS116-0.63	-	0.63	3.78	-	0.63	3.78
MS116-1.0	-	1	6	-	1.0	6.0
MS116-1.6	-	1.6	9.6	1/10	1.5	-
MS116-2.5	-	2.5	15	1/6	2.2	-
MS116-4.0	1/8	4	24	1/3	3.6	-
MS116-6.3	1/4	6.3	37.8	1/2	4.9	-
MS116-10	1/2	9.8	58.8	1-1/2	10	-
MS116-12	1/2	9.8	58.8	2	12	-
MS116-16	1	16	96	2	12	-
MS116-20	1-1/2	20	120	3	17	92
MS116-25	2	24	144	3	17	127
MS116-32	2	24	144	5	28	162

Motor rating, three phase

hp Horse power

FLA Full load amps

LRA Locked rotor amps

Type	220-240 VAC			440-480 VAC			550-600 VAC		
	hp	FLA	LRA	hp	FLA	LRA	hp	FLA	LRA
MS116-0.16	-	0.16	0.96	-	0.16	0.96	-	0.16	0.96
MS116-0.25	-	0.25	1.5	-	0.25	1.5	-	0.25	1.5
MS116-0.4	-	0.4	2.4	-	0.4	2.4	-	0.4	2.4
MS116-0.63	-	0.63	3.78	-	0.63	3.78	-	0.63	3.78
MS116-1.0	-	1.0	6.0		1.0	6.0	1/2	0.9	8
MS116-1.6	-	1.6	9.6	3/4	1.6	12.5	3/4	1.3	10
MS116-2.5	1/2	2.2	20	1	2.1	15	1-1/2	2.4	16
MS116-4.0	1	4.2	30	2	3.4	25	3	3.9	25.6
MS116-6.3	1-1/2	6.4	40	3	4.8	32	5	6.1	36.8
MS116-10	3	9.6	64	5	7.6	46	7-1/2	9	50.8
MS116-12	3	9.6	64	7-1/2	11	63.5	10	11	64.8
MS116-16	5	15.2	92	10	20	81	10	11	64.8
MS116-20	5	15.2	92	10	14	81	15	17	93
MS116-25	7-1/2	22	127	15	21	116	20	22	116
MS116-32	10	28	162	20	27	145	25	27	146

UL 508 — Manual Motor Controller

Type	Maximum fuse type K5 o. RK5 per UL/NEC	Maximum short-circuit current			
		for motor disconnect[1]		for group installation	
	480 V / 600 V	480 V	600 V	480 V	600 V
	A	kA	kA	kA	kA
MS116-0.16	100	30	5	18	5
MS116-0.25	100	30	5	18	5
MS116-0.4	100	30	5	18	5
MS116-0.63	100	30	5	18	5
MS116-1.0	100	30	5	18	5
MS116-1.6	100	30	5	18	5
MS116-2.5	100	30	5	18	5
MS116-4.0	100	18	5	18	5
MS116-6.3	100	18	5	18	5
MS116-10	100	18	5	18	5
MS116-12	100	18	5	18	5
MS116-16	100	18	5	18	5
MS116-20	100	18	5	18	5
MS116-25	100	18	5	18	5
MS116-32	100	18	5	18	5

[1] Suitable as motor disconnect only when provided with padlock SA1 or SA3...

Contact us

ABB STOTZ-KONTAKT GmbH
Eppelheimer Straße 82
69123 Heidelberg, Germany
Phone: +49 (0) 6221 7 01-0
Fax: +49 (0) 6221 7 01-13 25
E-Mail: info.desto@de.abb.com

You can find the address of your local sales organization on the ABB home page
http://www.abb.com/contacts
-> Low Voltage Products and Systems

Note:
We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB AG does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

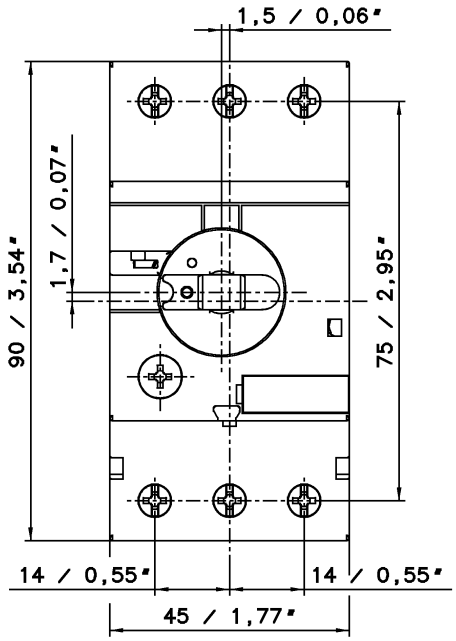
We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB AG.

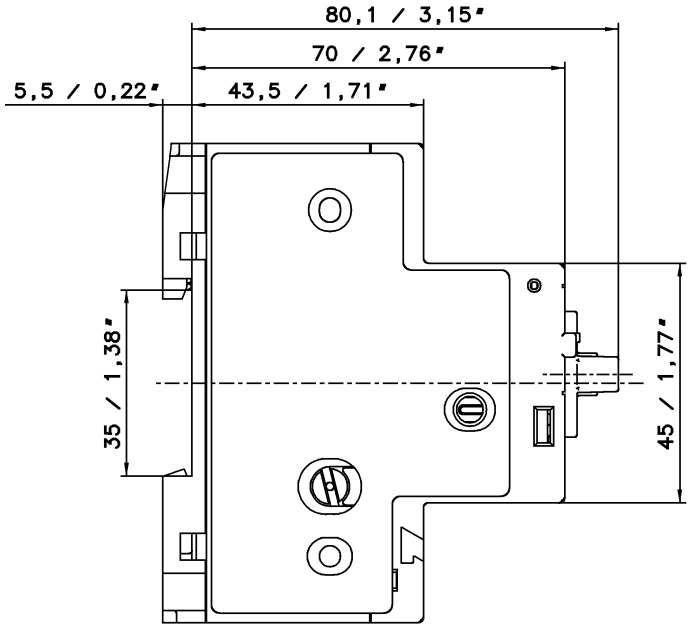
Copyright© 2014 ABB
All rights reserved

Brochure number 2CDC 131 025 D0201 (01.2014)

Power and productivity
for a better world™

	E	C	Pos.	Text	Ident-Nr.	EC	Masse/E
				Maßbild MS116 (mm / Inch)	1SA M20 0422 F...		





F1

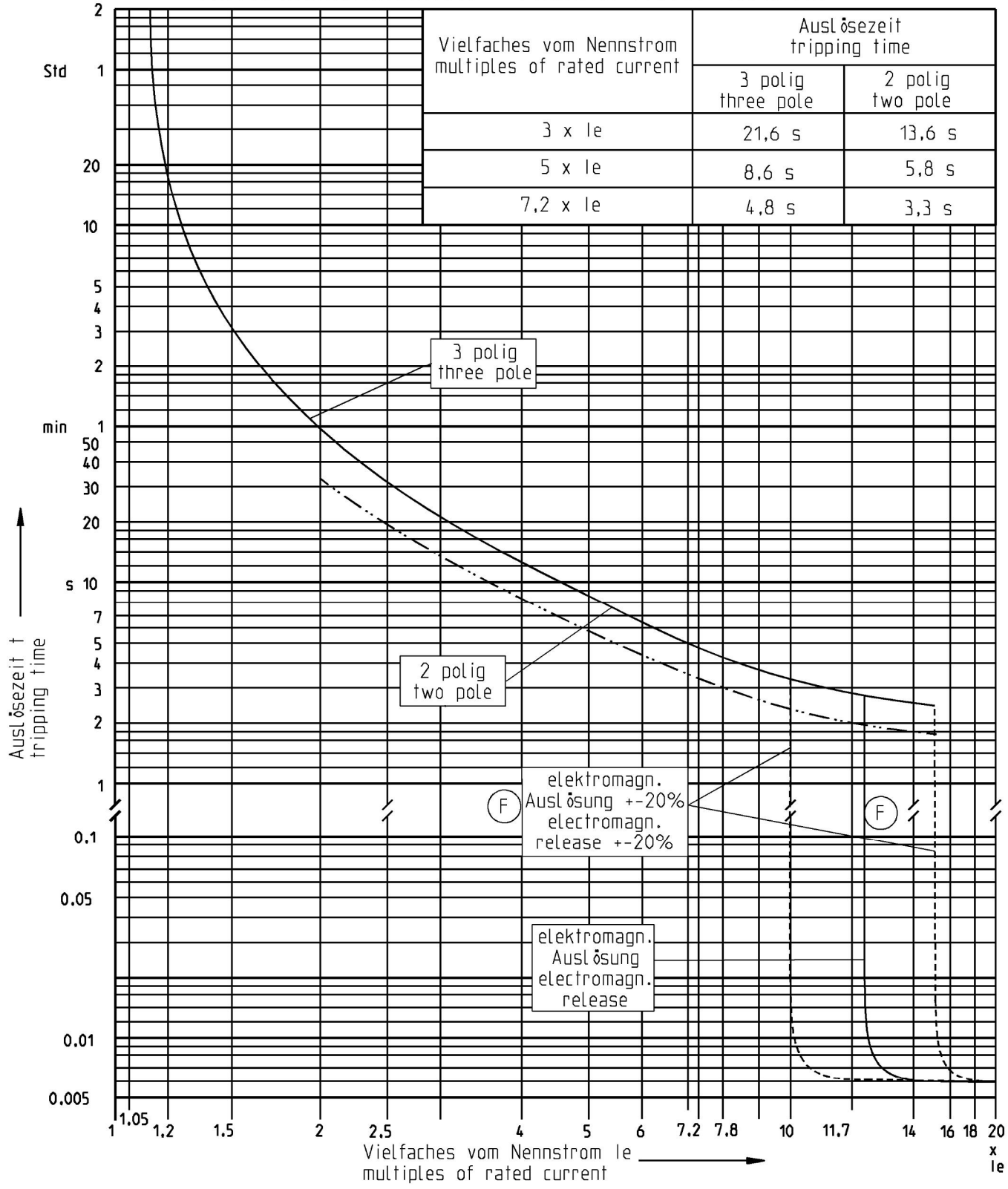
Aend.										
	a	700504 v.15.09.08	Entst. aus:	Ausgest.: 15.09.08 CoRa	Massstab	Sep.SL gleicher Nr. ☐	Sep.SL anderer Nr. ☐			
			Ersatz fuer:	Geprueft: 15.09.08 MiKo	1:1	Ohne sep. Stckl.: ☒	Uebern. Stelle:			
			Ers. durch:	Normgepr.:		Dok.-Art	Format	Sprache	Bl. Nr.	Anz. Bl.
			Zust. Stelle: STO/CLD	Freigeg.: 15.09.08 GuNi		I	A3	D	1	1

ABB Titel: Maßbild MS116 (mm / Inch) — 1SA M20 0422

Für dieses Dokument und den darin dargestellten Gegenstand behalten wir uns alle Rechte vor. Vervielfältigung, Bekanntgabe an Dritte oder Verwertung seines Inhaltes sind ohne unsere ausdrückliche Zustimmung verboten. We reserve all rights in this document and in the information contained therein. Reproduction, use or disclosure to third parties without express authority is strictly forbidden. © Copyright 2008 ABB

MS116- 4,00...6,30A
Motorschutzschalter/ Manual Motor Starter

Vielfaches vom Nennstrom multiples of rated current	Auslösezeit tripping time	
	3 polig three pole	2 polig two pole
3 x Ie	21,6 s	13,6 s
5 x Ie	8,6 s	5,8 s
7,2 x Ie	4,8 s	3,3 s



Auslösekennlinie (aus kaltem Zustand)
Die Ansprechwerte der elektromagnet. Auslöser beziehen sich auf Skala Maximum Ie_{max}
Für Nennströme (3-polig) zwischen dem 3-und 8-fachen des Einstellwertes beträgt die Toleranz der Auslösezeit ±20%

Tripping characteristic (from cold state)
The values of the electromagn. release refer to scale maximum (F)
For currents (3-pole) between 3 and 8 times the current setting the tolerance of the tripping time is ±20%

F9 (C)

保密文件，经手人赋有保密义务；未经授权而披露，权利人享有追偿权利

We reserve all rights in this document and in the information contained therein. Reproduction, use or disclosure to third parties without express authority is strictly forbidden.© Copyright 2012 ABB.

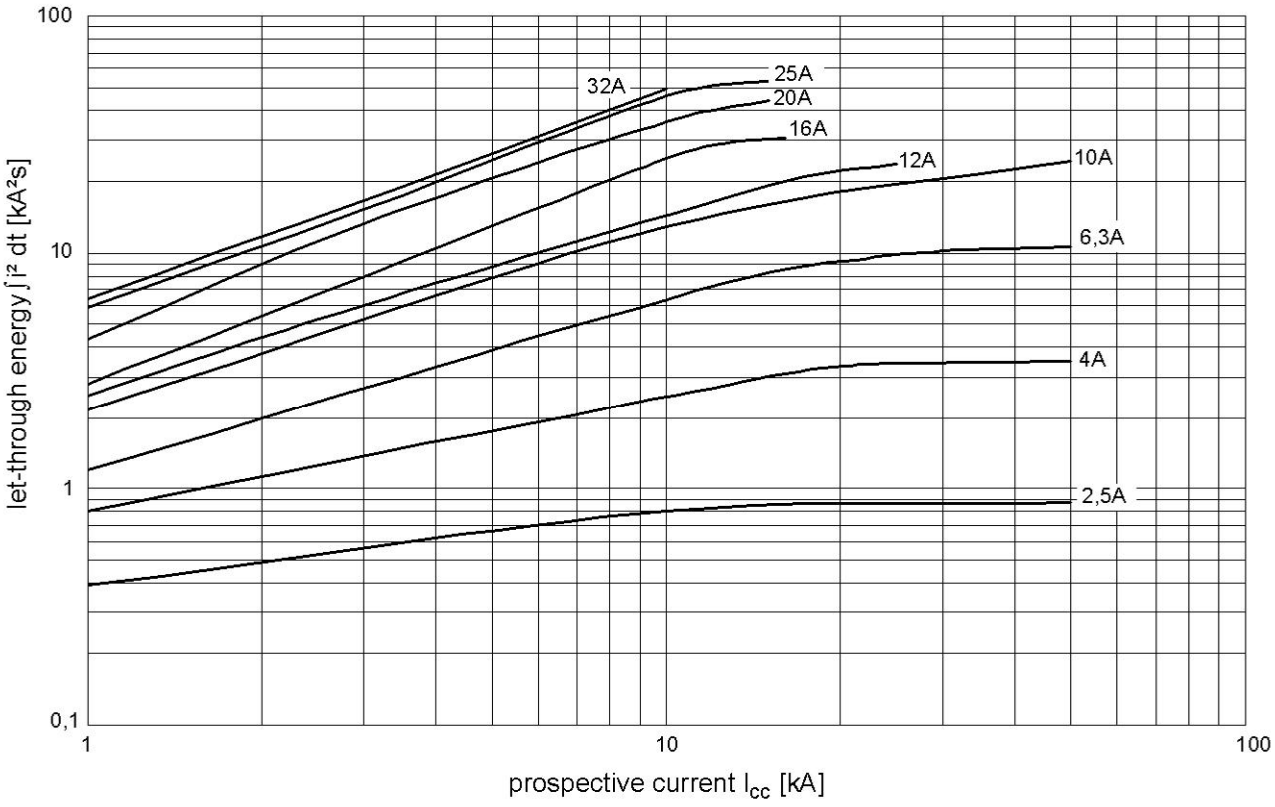
Fuer dieses Dokument und den darin dargestellten Gegenstand behalten wir uns alle Rechte vor. Vervielfaeltigung, Bekanntgabe an Dritte oder Verwertung seines Inhalts sind ohne unsere ausdrückliche Zustimmung verboten.© Copyright 2012 ABB.

Proprietary and Secret Information

Revision history	E 1	20000701926	D	M25141 v.08.07.08	C1	M25030 v.27.05.02		
Created by	04.10.12 F.Hustert		Checked by	K.Wittmann 07.02.13		Approved by	R.Kommert 25.02.13	
ECN number	20000702942	ECN date	25.10.12	Department	CLD	Scale	-	
Revision index	F 4	PRU	DESTO					
Partname	MODEL NAME F.6			Drawing		1SAM200505_F09 F.6		

Title (de)	Auslösekennlinie MS116	Format	Language	Sheet No.	No. Sheets
Title (en)	Tripping characteristic	A4	de/en	09	16 (E)
		1SAM200505			(F)

Ein-heit	ZC	Pos.-Nr.	Text	Ident-Nummer	EC	Änd.	Masse/E	|||
			I^2t-Characteristic at U_e=400V	1SA M20 0507 F..				



F1

Ausgest.: 25.02.03 CoRa	Geprüft: 21.08.12 HaWe	Normgepr.:	Freigeg.: 21.08.12 RiKo
Entst. aus:	Ersatz für:	Ers. durch:	Ohne sep. Stückliste: ☒

Änd.		Änd.		Änd.		Maßstab	Sep. SL gleicher Nr.: ☐
a	M25039 v.03.02.03					%	Sep. SL anderer Nr.: ☐
b	M25049 v.25.08.03						
c	20000702612						Übern. Stelle:
d	20000702819						Zust. Stelle: STO/CLD

ABB

Titel: Manual Motor Starter MS116

I^2t-Characteristic at U_e=400V

Dok.-Art	Format	Sprache	Bl.-Nr.	Anz. Bl.
	A 4	D	1	3

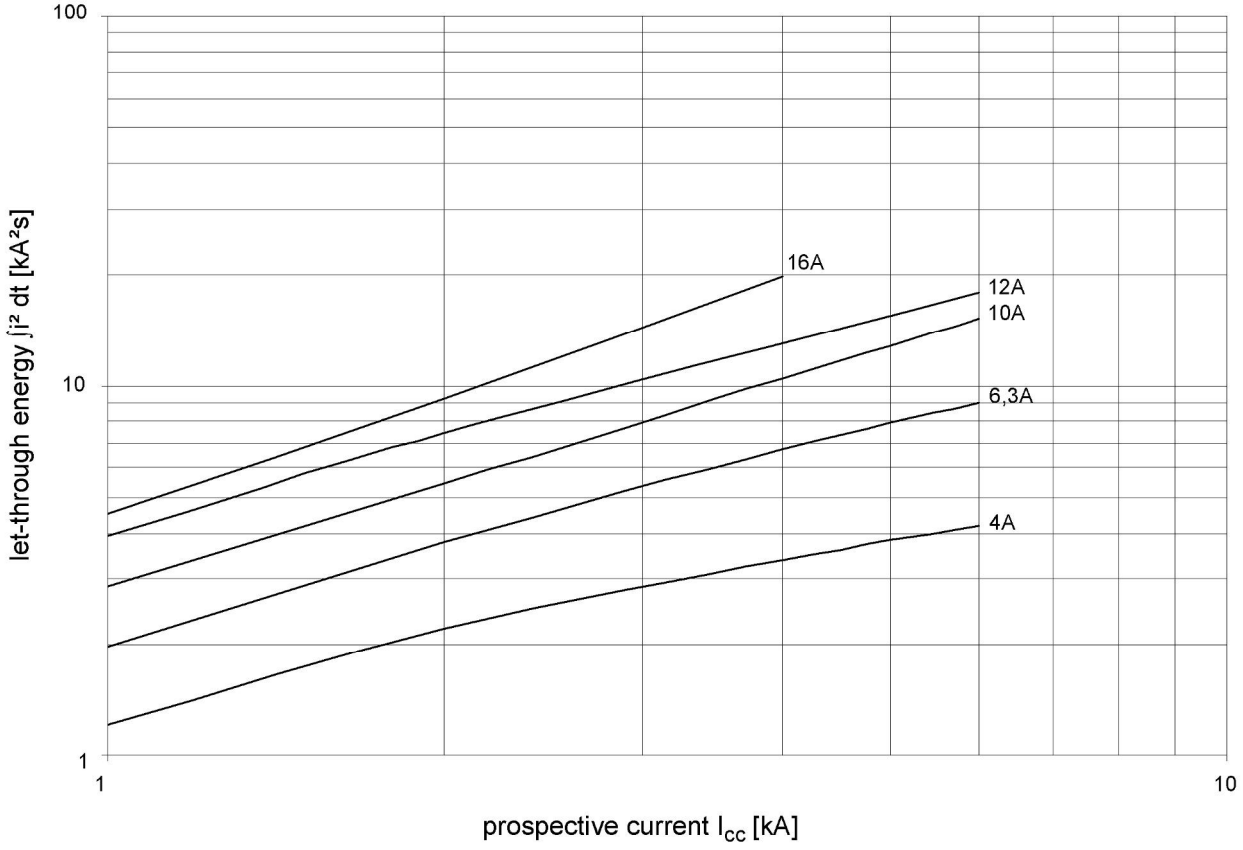
1SA M20 0507

Für dieses Dokument und den darin dargestellten Gegenstand behalten wir uns alle Rechte vor. Vervielfältigung, Bekanntgabe an Dritte oder Verwertung seines Inhaltes sind ohne unsere ausdrückliche Zustimmung verboten. We reserve all rights in this document and in the information contained therein. Reproduction, use or disclosure to third parties without express authority is strictly forbidden. © Copyright 2012 by ABB

Ein-heit	ZC	Pos.-Nr.	Text	Ident-Nummer	EC	Änd.	Masse/E	|||
			I^2t-Characteristic at U_e=500V	1SA M20 0507 F..				

Allgemeintoleranz nach ISO 2768 „mittel“ ☐ „grob“ ☐

Rauheits-Symbole nach GZN 020007 entsprechend DIN ISO 1302 0 50



F2

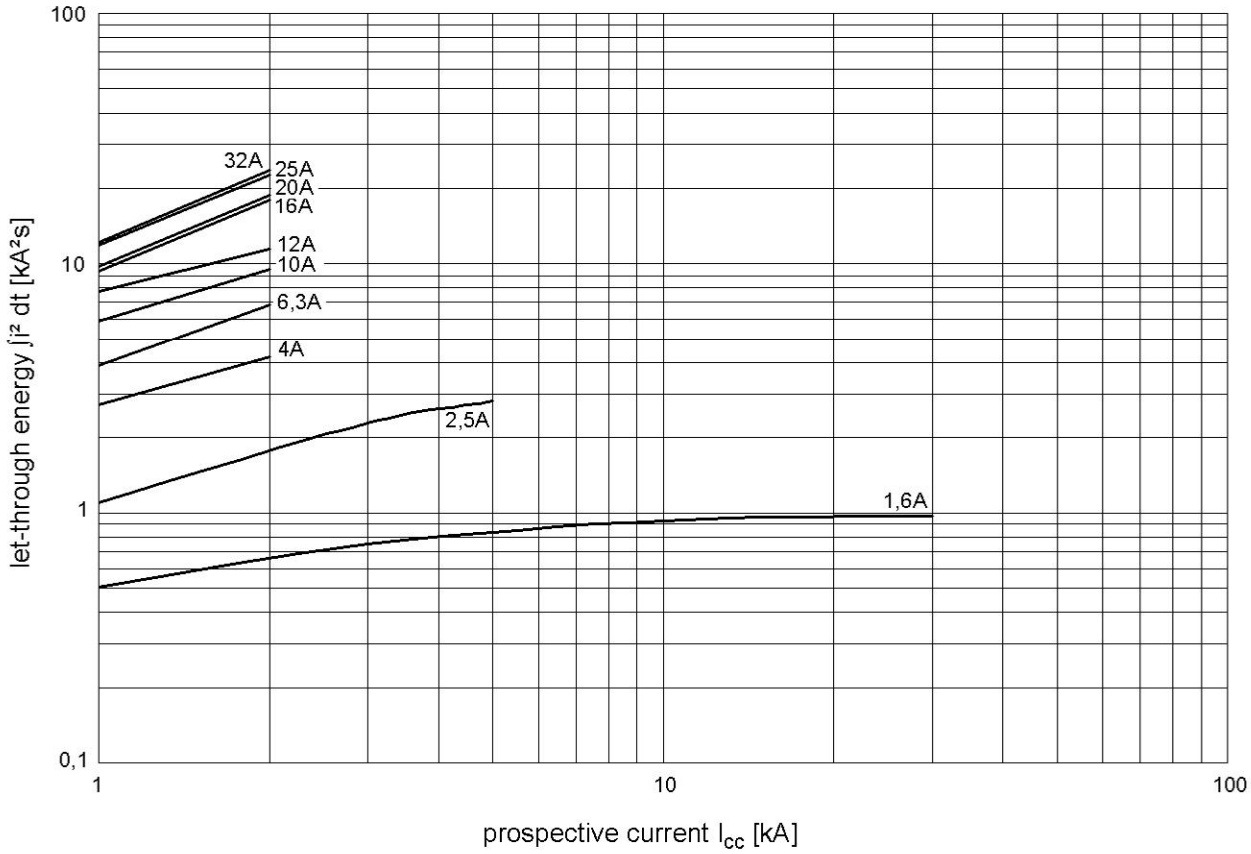
Ausgest.: 25.08.03 CoRa	Geprüft: 25.08.03 HpWe	Normgepr.:	Freigeg.: 25.08.03 GuNi
Entst. aus:	Ersatz für:	Ers. durch:	Ohne sep. Stückliste: ☒

Änd.		Änd.		Änd.		Maßstab	Sep. SL gleicher Nr.: ☐
a	M25049 v. 25.08.03					%	Sep. SL anderer Nr.: ☐
							Übern. Stelle:
							Zust. Stelle: STO/CLD

Titel	Manual Motor Starter MS116	Dok.-Art	Format	Sprache	Bl.-Nr.	Anz. Bl.
I^2t-Characteristic at U_e=500V			A 4	D	2	3
		1SA M20 0507 _ _ _				

Für diese Unterlage behalten wir uns alle Rechte,auch für den Fall der Patenterteilung und der Eintragung eines anderen gewerblichen Schutzrechtes vor. Mißbräuchliche Verwendung, wie insbesondere Vervielfältigung und Weitergabe an Dritte ist nicht gestattet: sie kann zivil- und strafrechtlich geahndet werden.

Ein-heit	ZC	Pos.-Nr.	Text	Ident-Nummer	EC	Änd.	Masse/E	|||
			I^2t-Characteristic at U_e=690V	1SA M20 0507 F..				



F3

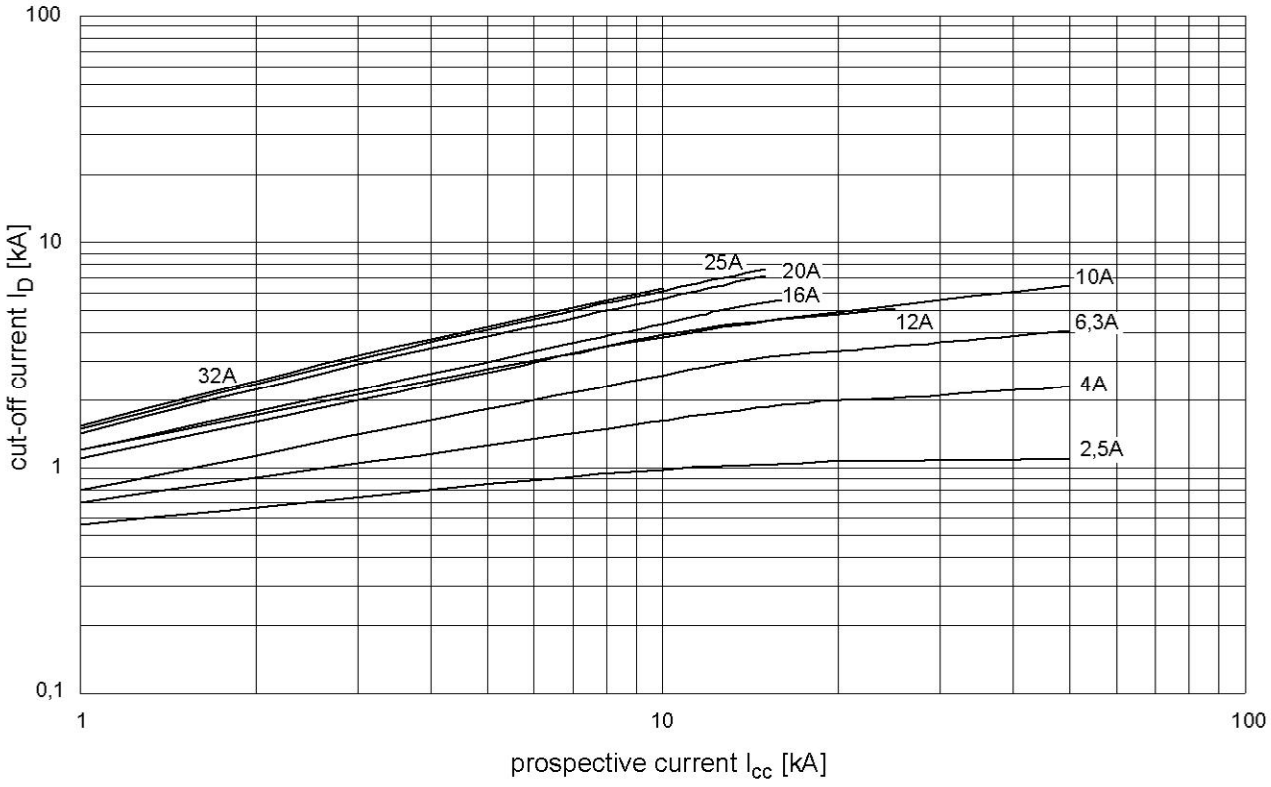
Ausgest.: 25.08.03 CoRa	Geprüft: 21.08.12 HaWe	Normgepr.:	Freigeg.: 21.08.12 RiKo
Entst. aus:	Ersatz für:	Ers. durch:	Ohne sep. Stückliste: ☒

Änd.		Änd.		Änd.		Maßstab	Sep. SL gleicher Nr.: ☐
a	M25049 v. 25.08.03					%	Sep. SL anderer Nr.: ☐
b	20000702819						
							Übern. Stelle:
							Zust. Stelle: STO/CLD

Titel	Manual Motor Starter MS116	Dok.-Art	Format	Sprache	Bl.-Nr.	Anz. Bl.
I^2t-Characteristic at U_e=690V			A 4	D	3	3
		1SA M20 0507				

Für dieses Dokument und den darin dargestellten Gegenstand behalten wir uns alle Rechte vor. Vervielfältigung, Bekanntgabe an Dritte oder Verwertung seines Inhaltes sind ohne unsere ausdrückliche Zustimmung verboten. We reserve all rights in this document and in the information contained therein. Reproduction, use or disclosure to third parties without express authority is strictly forbidden. © Copyright 2012 by ABB

Ein-heit	ZC	Pos.-Nr.	Text	Ident-Nummer	EC	Änd.	Masse/E	|||
			Cut-off Current Characteristic at U_e=400V	1SA M20 0508 F..				



F1

Ausgest.: 25.02.03 CoRa	Geprüft: 21.08.12 HaWe	Normgepr.:	Freigeg.: 21.08.12 RiKo	
Entst. aus:	Ersatz für:	Ers. durch:	Ohne sep. Stückliste: ☒	
Änd. a M25039 v. 03.02.03	Änd.	Änd.	Maßstab %	Sep. SL gleicher Nr.: ☐
b M25049 v. 25.08.03				Sep. SL anderer Nr.: ☐
c 20000702612				
d 20000702819				Übern. Stelle:
				Zust. Stelle: STO/CLD

ABB

Titel: Manual Motor Starter MS116

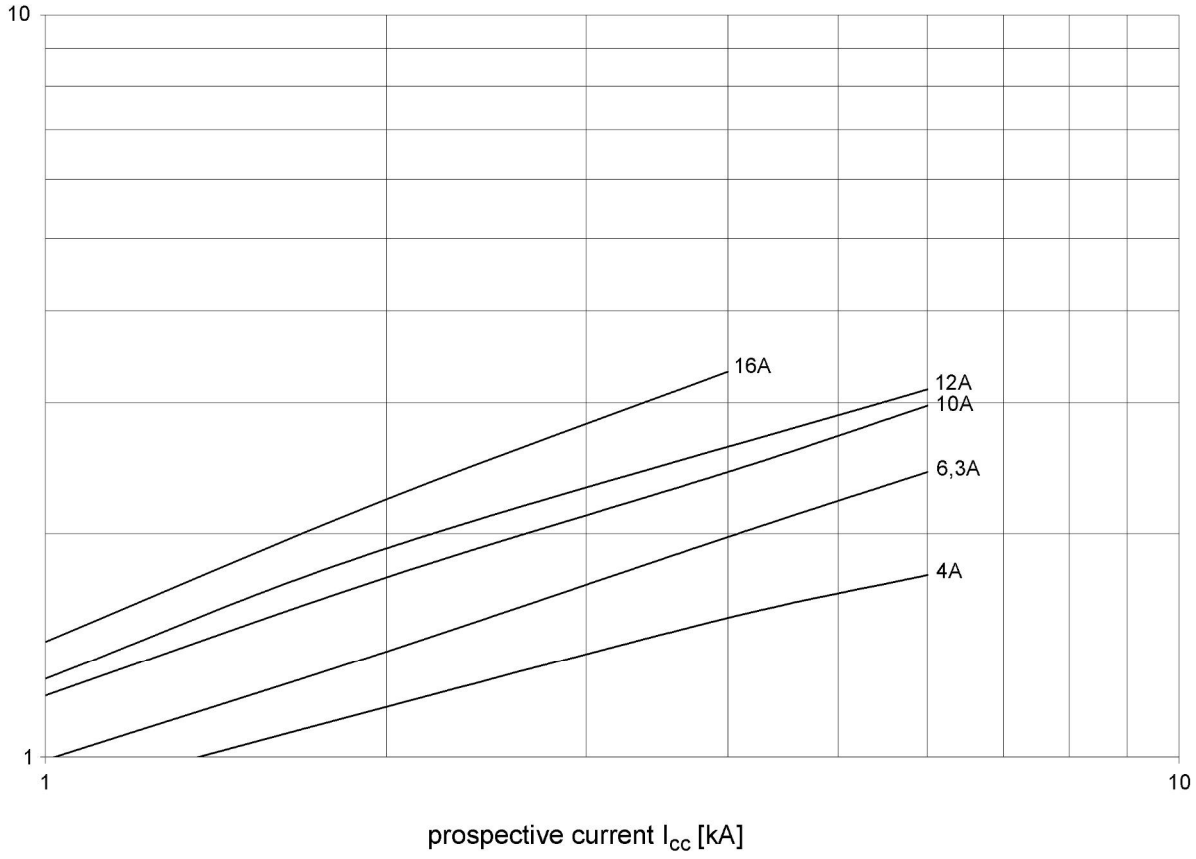
Cut-off Current Characteristic at U_e=400V

Dok.-Art	Format	Sprache	Bl.-Nr.	Anz. Bl.
	A 4	D	1	3

1SA M20 0508

Für dieses Dokument und den darin dargestellten Gegenstand behalten wir uns alle Rechte vor. Vervielfältigung, Bekanntgabe an Dritte oder Verwertung seines Inhaltes sind ohne unsere ausdrückliche Zustimmung verboten. We reserve all rights in this document and in the information contained therein. Reproduction, use or disclosure to third parties without express authority is strictly forbidden. © Copyright 2012 by ABB

Ein-heit	ZC	Pos.-Nr.	Text	Ident-Nummer	EC	Änd.	Masse/E	|||
			Cut-off Current Characteristic at U_e=500V	1SA M20 0508 F..				



F2

Allgemeintoleranz nach ISO 2768 „mittel" ☐ „grob" ☐

Rauheits-Symbole nach GZN 020007 entsprechend DIN ISO 1302

Für diese Unterlage behalten wir uns alle Rechte,auch für den Fall der Patenterteilung und der Eintragung eines anderen gewerblichen Schutzrechtes vor. Mißbräuchliche Verwendung, wie insbesondere Vervielfältigung und Weitergabe an Dritte ist nicht gestattet: sie kann zivil- und strafrechtlich geahndet werden.

Ausgest.: 25.02.03 CoRa	Geprüft: 25.08.03 HpWe	Normgepr.:	Freigeg.: 25.08.03 GuNi
Entst. aus:	Ersatz für:	Ers. durch:	Ohne sep. Stückliste: ☒
Änd. a M25049 v. 25.08.03	Änd.	Änd.	Maßstab %
			Sep. SL gleicher Nr.: ☐
			Sep. SL anderer Nr.: ☐
			Übern. Stelle:
			Zust. Stelle: STO/CLD

ABB

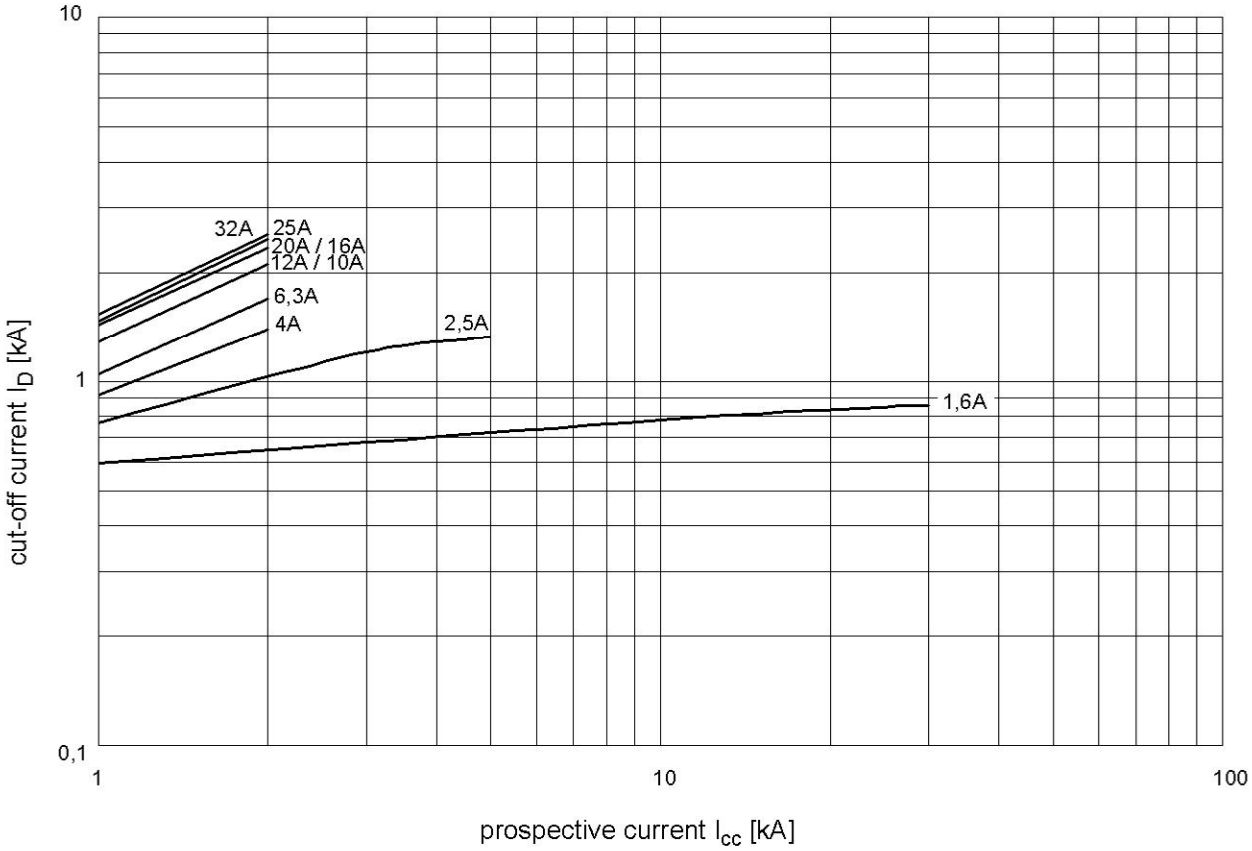
Titel: Manual Motor Starter MS116

Cut-off Current Characteristic at U_e=500V

Dok.-Art	Format	Sprache	Bl.-Nr.	Anz. Bl.
	A 4	D	2	3

1SA M20 0508 _ _ _

Ein-heit	ZC	Pos.-Nr.	Text	Ident-Nummer	EC	Änd.	Masse/E	|||
			Cut-off Current Characteristic at U_e=690V	1SA M20 0508 F..				



F3

Ausgest.: 25.02.03 CoRa	Geprüft: 22.08.12 HaWe	Normgepr.:	Freigeg.: 22.08.12 RiKo				
Entst. aus:	Ersatz für:	Ers. durch:	Ohne sep. Stückliste: ☒				
Änd. a M25049 v. 25.08.03	Änd.	Änd.	Maßstab %	Sep. SL gleicher Nr.: ☐			
Änd. b 20000702819				Sep. SL anderer Nr.: ☐			
				Übern. Stelle:			
				Zust. Stelle: STO/CLD			

Titel	Dok.-Art	Format	Sprache	Bl.-Nr.	Anz. Bl.
Manual Motor Starter MS116		A 4	D	3	3
Cut-off Current Characteristic at U_e=690V	1SA M20 0508				

Für dieses Dokument und den darin dargestellten Gegenstand behalten wir uns alle Rechte vor. Vervielfältigung, Bekanntgabe an Dritte oder Verwertung seines Inhaltes sind ohne unsere ausdrückliche Zustimmung verboten. We reserve all rights in this document and in the information contained therein. Reproduction, use or disclosure to third parties without express authority is strictly forbidden. © Copyright 2012 by ABB