

SIEMENS

Prüf-Nr./Q-Nr.: **1836a**
Certificate No.:

Dienststelle: **A&D CD CC TS2 / Hr. Witlatschil**
Department:

Ort: **Amberg** Tag: **13.01.2003**
Place: Date:

Anlagen: **Certificate No. DE 0004**
Enclosures: **Part B1, B2**
Test Report 93016T10
Test Report 93017T10

Prüfbescheinigung / Test - Certificate

Erzeugnis / Product: **Startercombination with BS88 Fuse Link**

Typ: **3TF3400-0AP0+3UA5500-2Q**
Type: **3TF3500-0AP0+3UA5500-2R**

Tech. Daten: **I_{BAC3}=32 A, Fuse 63 A**
Specification: **I_{BAC3}=38 A, Fuse 80 A**

Hersteller: **Siemens AG**
Manufacturer: **A&D CD CC**

Art der Prüfung / Type of test: **Type Test-Short Circuit Conditions**

Prüfer / Tested by: **TS1 Hr. Prechtl**

Labor / Laboratory:

ALPHA registered
Testing Laboratory D 06
Siemens AG, Amberg

Angewandte Prüfbestimmungen / Test specifications applied:
IEC 60947-4-1: 11.2000 + Amendment 1: 09.2002

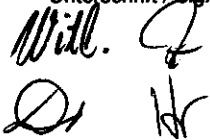
Durchgeführte Prüfungen / Tests conducted:
Test Sequence III

Prüfergebnis / Test results:
All requirements of the test specification are met.

Bemerkungen / Remarks: **Issued: 05.09.1994**
Index a dated 13.01.2003: Addition of LOVAG Test Report Nos.: 93016T10 and 93017T10.

Unterschrift / Signature

Gegengezeichnet / Released by:


A&D CD CC TS Mr. Walker
A&D CD CC TM Mr. Schweiger

SIEMENS AKTIENGESELLSCHAFT

Automation and Drives

H. Gierse (Group President), A. S. Huber, A. Ötsch

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Formular: June 2002



Gesellschaft zur Prüfung und
Zertifizierung von Niederspannungsgeräten e.V.



Certificate of Conformity

LOVAG-Certificate No.: DE 0004

Apparatus

Starter combination with BS 88 fuse link,
Contactor size 2

This Certificate applies only to the apparatus tested. The responsibility for conformity of any apparatus having the same designation with that tested rests with the manufacturer or responsible vendor.

This certificat has been prepared according to LOVAG (Low Voltage Agreement Group) Objectivs and Operating Principles of mutual recognition. The responsible certification body as a member of LOVAG issues a Certificate of Conformity with the above mentioned Standard(s) following the exclusiv use of LOVAG Test instructions wherever applicable

Only integral reproduction of this Certificate or reproductions of this page accompanied by any page(s) on wich are stated the tests performed and the assigned rated characteristics of the apparatus tested, are permitted without written permission from the LOVAG Signatory responsible for this Certificate

Designation

Contactor	Overload relais
3TF3400-0AP0	3UA5500-2Q
3TF3500-0AP0	3UA5500-2R

Manufacturer or responsible vendor

Siemens AG
Werner-von-Siemens-Str. 48
D-92220 Amberg

Tested for: Siemens AG / ASI 2 / Gerätewerk Amberg

Tested by: ALPHA Prüflaboratorium Amberg, Id Code D 06
P.O. Box 1963 D-92209 Amberg

The apparatus, constructed in accordance with the description mentioned in the Test Report listed on this Certificate has been subjected to the series of proving tests in accordance with
IEC 947-4-1 Sub-clause 8.3.4
Test sequence III,
Performance under short-circuit conditions

The results are shown in the Test Report in accordance to LOVAG. The values obtained and the general performance are considered to comply with the above Standard(s) and to justify the characteristics assigned by the manufacturer as stated below.

Contactor size 2 + Overload relais

Contactor	Overload relais	Ie/AC 3	Fuse
3TF3400-0AP0	3UA5500-2Q	32 A	63 A
3TF3500-0AP0	3UA5500-2R	38 A	80 A

Typ 2 coordination

400 V

This document includes Report No.: 93016T10 93017T10
Issue Date: 25.03.1994 25.03.1994

Responsible Certification Body

Zertifizierungsstelle ALPHA Gesellschaft zur Prüfung und Zertifizierung von Niederspannungsgeräten (ALPHA) e.V.

Deutscher Akkreditierungsrat



DAT-ZE-001/92-00

Rode

Authorized Signature

Date: 10.08.1994

ALPHA e.V. Stresemannalle 13 Postfach 70 12 61 D 60591 Frankfurt am Main

Siehe Hinweise auf der Rückseite

Part B1 - Test conducted

Manufacturer: **Siemens AG / ASI 2 / Gerätewerk Amberg**
 Test device: **Starter-combination with BS-88 fuse link**
 Type: **3TF.. + 3UA.. / 3UB..**
 Test specification: **IEC 947-4-1**
 Test report No.: **see listing**

Specification and sub-clause	Kind of tests and requirements					
IEC 947-4-1 Test sequence III 8.3.4	Performance under short-circuit conditions					
Contactor-Size	Contactor	Overload-relay	I _e /AC-3	Fuse	I _q	Test-report No.
00	3TF2010-0AP0 3TF2010-0AP0	3UA7021-0G 3UA7021-1J	0,63 A 9 A	2 A 16 A	6 kA	93011T10
0	3TF3000-0AP0 3TF3000-0AP0	3UA5000-0G 3UA5000-1J	0,63 A 9 A	2 A 20 A	50 kA	93012T10
	3TF3100-0AP0	3UA5000-2S	12 A	32 A	50 kA	93013T10
1	3TF3200-0AP0	3UA5200-2B	16 A	35 A	50 kA	93014T10
2	3TF3400-0AP0	3UA5500-2Q	32 A	63 A	50 kA	93016T10
	3TF3500-0AP0	3UA5500-2R	38 A	80 A	50 kA	93017T10
3	3TF4622-0AP0	3UA5800-2T	45 A	80 A	50 kA	93001T20
	3TF4722-0AP0	3UA5800-2P	63 A	100 A	50 kA	93002T20
4	3TF4822-0AP0	3UA5800-2U	75 A	125 A	50 kA	93003T20
	3TF4922-0AP0	3UA5800-8W	85 A	125 A	50 kA	93004T20
6	3TF5022-0AP0	3UA6000-3H	110 A	160 A	50 kA	93005T20
	3TF5122-0AP0	3UA6100-3K	140 A	200 A	50 kA	93006T20
8	3TF5222-0AP0	3UA6200-3M	170 A	250 A	50 kA	93007T20
	3TF5322-0AP0	3UA6600-3C	205 A	315 A	50 kA	93008T20
10	3TF5422-0AP0	3UA6600-3D	250 A	355 A	50 kA	93009T20
	3TF5522-0AP0	3UA6600-3D	300 A	400 A	50 kA	93010T20



Continuation Listing						
Specification and sub-clause	Kind of tests and requirements					
IEC 947-4-1 Test sequence III 8.3.4	Performance under short-circuit conditions					
Contactor-Size	Contactor	Overload-relay	$I_e/AC-3$	Fuse	I_q	Test-report No.
12	3TF5622-0AP0	3UA6600-3E	400 A	450 A	50 kA	93011T20
	3TF5722-0AP0	3UA6800-3F	475 A	500 A	50 kA	93012T20
14	3TF6844-0CM7	3UA6800-3G	630 A	500 A	50 kA	93013T20
	3TF6944-0CM7	3UB1105-1LM7+ 3UF1868-3GA00	820 A	630 A	50 kA	93014T20

The tests were carried out in the **ALPHA Prüflaboratorium Amberg.**

Accredited-No.: **DAT-P-026/9200**

Amberg, 06.07.94
Location Date

[Signature]
Signature



Part B2 - Nomenclature Breakdown

		3TF20	10	-	0A	P0
Contactor basic type						
3TF20	- I _e AC-1 = 16 A, U _e = 690 V					
3TF30	- I _e AC-1 = 20 A, U _e = 690 V					
3TF31	- I _e AC-1 = 20 A, U _e = 690 V					
3TF32	- I _e AC-1 = 30 A, U _e = 690 V					
3TF33	- I _e AC-1 = 30 A, U _e = 690 V					
3TF34	- I _e AC-1 = 55 A, U _e = 690 V					
3TF35	- I _e AC-1 = 55 A, U _e = 690 V					
3TF46	- I _e AC-1 = 80 A, U _e = 690 V					
3TF47	- I _e AC-1 = 90 A, U _e = 690 V					
3TF48	- I _e AC-1 = 100 A, U _e = 690 V					
3TF49	- I _e AC-1 = 100 A, U _e = 690 V					
3TF50	- I _e AC-1 = 160 A, U _e = 690 V					
3TF51	- I _e AC-1 = 160 A, U _e = 690 V					
3TF52	- I _e AC-1 = 210 A, U _e = 690 V					
3TF53	- I _e AC-1 = 220 A, U _e = 690 V					
3TF54	- I _e AC-1 = 300 A, U _e = 690 V					
3TF55	- I _e AC-1 = 300 A, U _e = 690 V					
3TF56	- I _e AC-1 = 400 A, U _e = 690 V					
3TF57	- I _e AC-1 = 550 A, U _e = 690 V					
3TF68	- I _e AC-1 = 630 A, U _e = 690 V					
3TF69	- I _e AC-1 = 850 A, U _e = 690 V					
Auxiliary contacts						
00	- no auxiliary contacts					
01	- 1 normally closed					
10	- 1 normally open					
11	- 1 normally open, 1 normally closed					
22	- 2 normally open, 2 normally closed					
44	- 4 normally open, 4 normally closed					
Type of operating						
0A	- a.c. operating upto 3TF56					
0C	- a.c. operating for 3TF57, 3TF68 and 3TF69					
0B	- d.c. operating upto 3TF56					
1D	- d.c. operating for 3TF57, 3TF68 and 3TF69					
Rated control voltage						
B0	- 24 V 50 Hz	C1	- 24 V 60 Hz	C2	- 24 V 50/60 Hz	
C0	- 32 V 50 Hz	G0	- 42 V 60 Hz	D2	- 42 V 50/60 Hz	
G0	- 36 V 50 Hz	G1	- 110 V 60 Hz	G2	- 110 V 50/60 Hz	
D0	- 42 V 50 Hz	J1	- 115 V 60 Hz	J2	- 115 V 50/60 Hz	
H0	- 48 V 50 Hz	K1	- 120 V 60 Hz	K2	- 120 V 50/60 Hz	
E0	- 60 V 50 Hz	M1	- 208 V 60 Hz	M2	- 208 V 50/60 Hz	
F0	- 110 V 50 Hz	N1	- 220 V 60 Hz	N2	- 220 V 50/60 Hz	
L0	- 125/127 V 50 Hz	L1	- 230 V 60 Hz	L2	- 230 V 50/60 Hz	
M0	- 220 V 50 Hz	P1	- 240 V 60 Hz	P2	- 240 V 50/60 Hz	
P0	- 230/220 V 50 Hz	R1	- 440 V 60 Hz	R2	- 440 V 50/60 Hz	
U0	- 240 V 50 Hz	Q0	- 460 V 60 Hz	S2	- 575 V 50/60 Hz	
Q0	- 380 V 50 Hz	S1	- 575 V 60 Hz	F7	- 110-132 V 50/60 Hz for 3TF57 / 68 / 69	
V0	- 400/380 V 50 Hz	S0	- 600 V 60 Hz	M7	- 200-240 V 50/60 Hz for 3TF57 / 68 / 69	
R0	- 415 V 50 Hz			P7	- 230-276 V 50/60 Hz for 3TF57 / 68 / 69	
S0	- 500 V 50 Hz			Q7	- 380-460 V 50/60 Hz for 3TF57 / 68 / 69	
				S7	- 500-600 V 50/60 Hz for 3TF57 / 68 / 69	



3TF20 10 - 0A P0

Continuation Rated control voltage

A4 - 12 V d.c.	F4 - 110 V d.c.
U4 - 21,5 V d.c.	G4 - 125 V d.c.
B4 - 24 V d.c.	K4 - 180 V d.c.
C4 - 30 V d.c.	M4 - 220 V d.c.
V4 - 36 V d.c.	P4 - 230 V d.c.
D4 - 42 V d.c.	Q4 - 240 V d.c.
W4 - 48 V d.c.	N4 - 250 V d.c.
E4 - 60 V d.c.	

3UA70 21 - 0G

Thermal Overload Delay Relays Basic Type

3UA70 - for use with contactor size 00
3UA50 - for use with contactor size 0
3UA52 - for use with contactor size 1
3UA55 - for use with contactor size 2
3UA58 - for use with contactor size 3 and 4
3UA60 - for use with contactor size 4 and 5
3UA61 - for use with contactor size 6
3UA62 - for use with contactor size 8
3UA66 - for use with contactor size 8, 10 and 12
3UA68 - for use with contactor size 12 and 14

Solid-State Overload Relays Basic Type

3UB11 - for use with contactor size 2 upto 14 in connection with current transformer

Current Transformer Basic Type

3UF18 - 50 - 630 A

Indicates Open Type

21	- 1 normally open, 1 normally closed RESET-OFF button, TEST button Phase failure protection Switching position indication
00	- 1 normally open, 1 normally closed Manual/automatic RESET Switching position indication Terminal for contactor coil Phase failure protection
05	- Basic Type designation for 3UB11
68	- Basic Type designation for 3UF18 160-630 A

Setting Range

0G - 0,4 - 6,3 A	3H - 90 - 120 A
1J - 6,3 - 10 A	3K - 120 - 150 A
2S - 10 - 14,5 A	3M - 150 - 180 A
2B - 12,5 - 20 A	3C - 160 - 250 A
2Q - 25 - 36 A	3D - 200 - 320 A
2R - 32 - 40 A	3E - 250 - 400 A
2T - 40 - 57 A	3F - 320 - 500 A
2P - 50 - 63 A	3G - 400 - 630 A
2U - 63 - 80 A	1LM7 - 205 - 820 A for 3UB11
8W - 70 - 88 A	3GA00 - 160 - 630 A for 3UF18

Test Report No. 93016T10.....

Test laboratory: *Siemens AG, ASI 2 GWA.....*
DAR.Reg.nr.: DAT-P-026/9200.....

Client: *Siemens AG, ASI 2 GWA.....*

Manufacturer: *Siemens AG.....*

Test object: *Starter combination with BS-88 fuse link.....*

Type designation: *3TF3400-0AP0, 3UA5500-2Q.....*

Date(s) of test(s): *09/93.....*

Date(s) of receipt: *09/93.....*

Test specification: IEC 947-4-1 (1990 - 05) and corrigendum(Dec. 91)
 EN 60947-4-1 (1992-01)

Test sequence(s) *III,.....*

Test results: *Type "2" co-ordination OK.....*

The Record of Proving Test consists of:

<i>13</i> pages LOVAG test report forms	<i>6</i> pages : oscillograms
<i>1</i> other pages	<i>1</i> pages : drawings
<i>5</i> pages : diagrams	<i>7</i> pages : photographs

Date of issue: *25.08.93.....*

Responsible Test Laboratory

ALPHA-Prüflaboratorium
Amberg

Signatures: *[Signature]*.....

(Authorized representative)

Note:

The test result relates only to the items tested.
 The test report shall not be reproduced except in full
 without the written approval of the test laboratory.

Description and characterization of the test object

Kind of equipment starter combination

Characteristics

Number of poles 3
 Kind of current ac
 Number of phases 3
 Rated frequency 50/60 Hz
 Interrupting medium air
 Method of operation electromagnetic
 Intermittent duty class -
 On-load factor -
 Suitability for isolation -
 Integral non-metallic enclosure -
 Degree of protection -

Rated values

Main circuit

Terminal materials -
 Rated impulse withstand voltage U_{imp} 2 kV
 Rated insulation voltage U_i 690 V
 Conventional thermal current I_{th}/I_{the} -

For AC3 category :

- maximum rated operational voltage $U_e \max$ 690 V
- maximum rated operational current 32 A

Rated operational voltage U_e (V)	Rated operational currents I_e (A) for utilization category		
	AC-1	AC-3	AC-4

Test laboratory:

ALPHA-Prüflaboratorium
Amberg


Authorized representative

F 947-4-1/2 ind 0

25.03.34
Date

Control circuit

Electrical control circuit :

Terminal materials -

Coil : class of insulating material E

Kind of current ac

Rated frequency 50/60 Hz

Rated control supply voltage U_s 230 V

Rated impulse withstand voltage U_{imp} -

Rated insulation voltage U_i 690 V

Air-supply control circuit :

Rated supply pressure -

Limits of pressure -

Required volume for each closing operation -

Required volume for each opening operation -

The control circuit are / are not designed to be linked to the main circuit -

Manual operation

Actuating force (moment) -

Test laboratory:

ALPHA-Prüflaboratorium
Amberg


Authorized representative

F 947-4-1/3 ind 0

25.03.94
Date

Releases

* Release with shunt coil, under - voltage (current) opening release

Type of release -
Rated impulse withstand voltage U_{imp} -
Rated insulation voltage U_i -
Rated voltage / current -
Rated frequency -
Operating voltage / current -
Operating time -

* Overload relay

a) Overload time-delay relay

- independent of previous load (e.g. time delay magnetic overload relay) -
- dependent on previous load (e.g. thermal overload relay)	..... yes
. compensated for ambient temperature	..... yes
. not compensated for ambient temperature -
. sensitive to phase loss	..... yes

Number of poles	..... 3
Rated impulse withstand voltage U_{imp}	..... 6 kV
Rated insulation voltage U_i	..... 650 V
Kind of current	..... ac/dc
Rated frequency	..... < 400 Hz
Current setting (or range of settings)	..... 25..36
Time lag -
Trip class	..... 10A
Time-current characteristics	..... page 18

b) Instantaneous magnetic overload relay

Number of poles -
Kind of current -
Rated frequency -
Current setting -

Test laboratory:

ALPHA-Prüflaboratorium
Amberg



Authorized representative

F 947-4-1/5 ind 0

25.03.94

Date

Individual enclosure

- Type :
- Kind of material :
- Degree of protection :
- Inside dimensions (in millimeters) :

- height :
- width :
- depth :

When no enclosure

Distances between the device and the screens :

- upper screen : 10 mm
- front screen : 10 mm
- lower screen : 10 mm

Co-ordination with short-circuit protective devices

- Type of co-ordination 2
- Short-circuit protective device :
- circuit-breaker
- manufacturer -
- reference -
- max rated operational current I_e max = A
- rated short-circuit making capacity underV I_{cm} = kA
- rated ultimate short-circuit breaking capacity underV I_{cu} = A
- max setting current of the magnetic relay A
- fuses
- manufacturer GEC FLSYHOM
- reference TIR32M63
- rated current 63 A
- breaking capacity 80 kA / 415 V
- time-current characteristics page 19

Test Report No. 93017T10.....

Test laboratory: *Siemens AG, ASI 2 GWA.....*
DAR.Reg.nr.: DAT-P-026/9200.....

Client: *Siemens AG, ASI 2 GWA.....*

Manufacturer: *Siemens AG.....*

Test object: *Starter combination with BS-88 fuse link.....*

Type designation: *3TF3500-0APO, 3UA5500-2R.....*

Date(s) of test(s): *09/93.....*

Date(s) of receipt: *09/93.....*

Test specification: IEC 947-4-1 (1990 - 05) and corrigendum(Dec. 91)
 EN 60947-4-1 (1992-01)

Test sequence(s) *III,.....*

Test results: *Type "2" co-ordination OK.....*

The Record of Proving Test consists of:

- | | |
|---|-------------------------------|
| <i>13</i> pages LOVAG test report forms | <i>6</i> pages : oscillograms |
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| <i>5</i> pages : diagrams | <i>—</i> pages : photographs |

Date of issue: *25.03.94.....*

Responsible Test Laboratory

ALPHA-Prüflaboratorium
Amberg

Signatures: *[Signature]*

(Authorized representative)

Note:

The test result relates only to the items tested.
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 without the written approval of the test laboratory.

Description and characterization of the test object

Kind of equipment *starter combination*

Characteristics

Number of poles *3*
 Kind of current *ac*
 Number of phases *3*
 Rated frequency *50/60 Hz*
 Interrupting medium *air*
 Method of operation *electromagnetic*
 Intermittent duty class *-*
 On-load factor *-*
 Suitability for isolation *yes -*
 Integral non-metallic enclosure *-*
 Degree of protection *-*

Rated values

Main circuit

Terminal materials *-*
 Rated impulse withstand voltage U_{imp} *8 kV*
 Rated insulation voltage U_i *690 V*
 Conventional thermal current I_{th}/I_{the} *-*

For AC3 category :

- maximum rated operational voltage U_e max *690 V*
- maximum rated operational current *38 A*

Rated operational voltage U_e (V)	Rated operational currents I_e (A) for utilization category		
	AC-1	AC-3	AC-4
.....			
.....			
.....			
.....			

Control circuit

Electrical control circuit :

Terminal materials -

Coil : class of insulating material E

Kind of current ac

Rated frequency 50/60 Hz

Rated control supply voltage U_s 230 V

Rated impulse withstand voltage U_{imp} -

Rated insulation voltage U_i 690V

Air-supply control circuit :

Rated supply pressure -

Limits of pressure -

Required volume for each closing operation -

Required volume for each opening operation -

The control circuit are / are not designed to be linked to the main circuit -

Manual operation

Actuating force (moment) -

Releases

* Release with shunt coil, under - voltage (current) opening release

Type of release	.....
Rated impulse withstand voltage U_{imo}	.....
Rated insulation voltage U_i	.....
Rated voltage / current	.....
Rated frequency	.....
Operating voltage / current	.....
Operating time	.....

* Overload relay

a) Overload time-delay relay

- independent of previous load (e.g. time delay magnetic overload relay)	.....
- dependent on previous load (e.g. thermal overload relay)	..... yes
. compensated for ambient temperature	..... yes
. not compensated for ambient temperature -
. sensitive to phase loss	..... yes

Number of poles	..... 3
Rated impulse withstand voltage U_{imp}	..... 6 kV
Rated insulation voltage U_i	..... 690 V
Kind of current	..... ac/dc
Rated frequency	..... < 400 Hz
Current setting (or range of settings)	..... 32 .. 40 A
Time lag -
Trip class	..... 10A
Time-current characteristics	page

b) Instantaneous magnetic overload relay

Number of poles -
Kind of current -
Rated frequency -
Current setting -

Individual enclosure

- Type : -
 - Kind of material : -
 - Degree of protection : -
 - Inside dimensions (in millimeters) : -

 height : -
 width : -
 depth : -

When no enclosure

Distances between the device and the screens :

upper screen : 10 mm
 front screen : 10 mm
 lower screen : 10 mm

Co-ordination with short-circuit protective devices

Type of co-ordination 2
 Short-circuit protective device :
 - circuit-breaker
 manufacturer
 reference
 max rated operational current $I_e \text{ max} =$ A
 rated short-circuit making capacity under V $I_{cm} =$ kA
 rated ultimate short-circuit breaking capacity under V $I_{cu} =$ A
 max setting current of the magnetic relay A
 - fuses
 manufacturer GEC ALSTHOM
 reference TIR 63 M 80
 rated current 80 A
 breaking capacity 80 kA / 415 V
 - time-current characteristics page 18