

## IEC62955 Typical Test Results

### 9.9.2 Verification of correct operation of RDC-DDs with smooth DC residual current

#### 9.9.2.1 Verification of correct operation in case of a steady increase of smooth DC residual current

Fault	I	I	II	II	II	Limits mA	
2 – 6mAdc	4.5	4.5	4.45	4.45	4.45	3	6

#### 9.9.2.3 Verification of correct operation in case of sudden appearance of smooth DC residual current

Fault	I	I	II	II	II	Limits ms	
6mAdc	2040	2020	1920	1920	1920	0	10000
60mAdc	58	58	58	58	58	0	300
200mAdc	21	21	21	21	20	0	100

#### 9.9.2.4 Verification of correct operation with load (40A)

##### 9.9.2.3 Verification of correct operation in case of sudden appearance of smooth DC residual current

Fault	I	I	II	II	II	Limits ms	
6mAdc	2100	2100	1900	1860	1900	0	10000
60mAdc	58	58	58	58	58	0	300
200mAdc	21	21	20	21	21	0	100

#### 9.9.2.5 Tests at the temperature limits

##### 9.9.2.3 Verification of correct operation in case of sudden appearance of smooth DC residual current

**-25°C**

Fault	I	I	II	II	II	Limits ms	
6mAdc	1980	1990	1910	1910	1900	0	10000
60mAdc	62	61	60	60	60	0	300
200mAdc	21	22	21	21	21	0	100

##### 9.9.2.3 Verification of correct operation in case of sudden appearance of smooth DC residual current

**85°C**

Fault	I	I	II	II	II	Limits sec	
6mAdc	2030	2030	2060	2070	2070	0	10000
60mAdc	61	60	61	61	60	0	300
200mAdc	21	21	22	21	21	0	100

#### 9.9.2.6 Verification of the correct operation in case of residual direct currents which may result from rectifying circuits supplied from two phases

Fault	I	I	I	I	I	II	II	II	II	II	Limits mA	
2 – 7mAdc	4.5	4.5	4.5	4.5	4.5	4.6	4.6	4.6	4.6	4.6	3.5	7

  

Fault	I	I	I	I	I	II	II	II	II	II	Limits ms	
60mAdc	60	60	58	60	60	58	60	58	58	56	0	300
200mAdc	21	20	22	22	22	22	22	22	19	19	0	100

#### 9.9.2.7 Verification of the correct operation in case of residual direct currents which may result from rectifying circuits supplied from three phases

Fault	I	I	I	I	I	II	II	II	II	II	Limits mA	
2 – 6.2mAdc	4.5	4.5	4.5	4.5	4.5	4.6	4.6	4.6	4.6	4.6	3.1	6.2

  

Fault	I	I	I	I	I	II	II	II	II	II	Limits ms	
60mAdc	60	59	59	60	59	59	59	58	59	60	0	300
200mAdc	20	19	20	20	21	21	21	20	19	20	0	100

### 9.9.3 Verification of non-operating time for alternating residual currents

Fault	30mA	60mA	150mA	5A
Time	10000ms	300ms	80ms	80ms
	No Trip	No Trip	No Trip	No Trip

# IEC62752 Typical Test Results

## 9.7.2 Residual sinusoidal alternating currents tests

9.7.2.2 Verification of correct operation in case of a steady increase of the residual current

Fault	I	I	I	I	I	II	II	II	II	II	Limits mA	
<6mA – 30mAac	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	15	30

9.7.2.4 Verification of correct operation in case of sudden appearance of residual current

Fault	I	I	I	I	I	Limits ms	
30mAac	118	116	124	120	121	0	300
60mAac	28	27	28	31	30	0	150
150mAac	11	12	8	11	12	0	40

9.7.2.5 Verification of correct operation in case of sudden appearance of residual current between 5A and 100A

Fault	I	I	I	I	I	Limits ms	
5Aac	7	11	9	10	10	0	40
10Aac	8	8	10	9	8	0	40
20Aac	9	9	8	8	8	0	40
50Aac	8	8	8	9	7	0	40
100Aac	7	8	8	8	7	0	40

9.7.2.6 Verification of correct operation with load (40A) at reference temperature

9.7.2.4 Verification of correct operation in case of sudden appearance of residual current

Fault	I	I	I	I	I	Limits ms	
30mAac	150	150	145	145	140	0	300
60mAac	33	28	31	32	32	0	150
150mAac	8	11	11	12	12	0	40

9.7.2.7 Tests at the temperature limits

9.7.2.4 Verification of correct operation in case of sudden appearance of residual current

-25°C

Fault	I	I	I	I	I	Limits ms	
30mAac	120	116	124	120	116	0	300
60mAac	27	29	28	32	30	0	150
150mAac	12	13	13	9	12	0	40

9.7.2.4 Verification of correct operation in case of sudden appearance of residual current

85°C

Fault	I	I	I	I	I	Limits ms	
30mAac	120	125	125	120	125	0	300
60mAac	32	30	28	32	32	0	150
150mAac	13	13	12	14	13	0	40

9.7.2.8 Verification of the correct operation at low ambient air temperatures of -25 °C or lower

-40°C

Fault	I	Limits ms	
37.5mAac	80	0	300
52.5mA 0°	55	0	300

## 9.7.3 Verification of the correct operation with residual currents having a DC component

9.7.3.2 Verification of the correct operation in case of a continuous rise of a residual pulsating direct current

Fault	I	I	II	II	Limits mA	
0 – 42mA 0°	7.1	7.1	7.1	7.1	4.5	42
0 – 42mA 90°	10.3	10.3	10.2	10.2	6.3	42
0 – 42mA 135°	15.1	15.1	14.8	14.8	3.3	42

9.7.3.3 Verification of the correct operation in case of suddenly appearing residual pulsating direct currents with or without being superimposed by a smooth direct current

a)		I	I	II	II	Limits ms	
42mA 0°	Fault	68	67	67	68	0	300
84mA 0°	Fault	13	23	13	25	0	150
210mA 0°	Fault	7	7	7	6	0	40
b)		I	I	II	II	Limits ms	
42mA 0° + 6mA	Fault	86	100	58	48	0	300
84mA 0° + 6mA	Fault	27	42	12	23	0	150
210mA 0° + 6mA	Fault	18	7	18	7	0	40

9.7.3.4 Verification at the reference temperature of the correct operation with load

Fault	I	I	II	II	Limits mA	
0 – 42mA 0°	7.1	7.1	7.1	7.1	4.5	42
0 – 42mA 90°	10.3	10.3	10.3	10.3	6.3	42
0 – 42mA 135°	15.1	15.1	15.1	15.1	3.3	42

**9.7.4 Verification of behaviour in case of composite residual current**

9.7.4.2 Verification of the correct operation in case of a steady increase of composite residual current

Fault	I	I	I	Limits mA	
0 – 42mA Comp	29.2	29.2	29.2	15	42

9.7.4.3 Verification of the correct operation in case of the sudden appearance of composite residual current

Fault	I	I	I	Limits ms	
210mA Comp	11	12	12	0	40

**9.7.5 Verification of correct operation in case of smooth DC residual current**

a)						
Fault	I	I	II	II	Limits mA	
0 – 6mAdc	4.5	4.5	4.45	4.45	3	6

  

b)						
Fault	I	I	Limits sec			
6mAdc	2040	2040	0	10		
60mAdc	22	22	0	0.3		
300mAdc	8	8	0	0.1		

**9.7.10 Verification of the correct operation in case of residual direct currents which may result from rectifying circuits supplied from two phases**

a)													
Fault	I	I	I	I	I	II	II	II	II	II	II	Limits mA	
<2mA – 7mAdc	4.5	4.5	4.5	4.5	4.5	4.6	4.6	4.6	4.6	4.6	4.6	3.5	7

  

b)													
Fault	I	I	I	I	I	II	II	II	II	II	II	Limits ms	
60mAdc	20	22	22	22	20	22	21	22	20	22	22	0	300
120mAdc	9	11	10	12	12	10	13	10	13	13	13	0	150
300mAdc	7	8	6	5	7	6	7	8	6	8	8	0	40
5Adc	8	8	7	8	7	8	7	8	7	8	8	0	40
10Adc	7	7	7	7	8	7	7	7	8	7	7	0	40
20Adc	7	8	7	7	8	7	7	7	8	7	7	0	40
50Adc	8	7	7	9	8	7	7	7	8	9	9	0	40

**9.7.11 Verification of the correct operation in case of residual direct currents which may result from rectifying circuits supplied from three phases**

a)													
Fault	I	I	I	I	I	II	II	II	II	II	II	Limits mA	
<2mA – 6.2mAdc	4.5	4.5	4.5	4.5	4.5	4.6	4.6	4.6	4.6	4.6	4.6	3.1	6.2

  

b)													
Fault	I	I	I	I	I	II	II	II	II	II	II	Limits ms	
60mAdc	23	23	23	23	23	23	22	23	23	22	22	0	300
120mAdc	12	13	12	11	12	12	12	13	12	12	12	0	150
300mAdc	7	8	7	6	7	6	7	6	7	8	8	0	40
5Adc	8	8	8	8	7	8	7	7	8	8	8	0	40
10Adc	8	8	8	8	8	8	7	8	8	7	7	0	40
20Adc	8	7	8	7	7	7	7	8	7	8	8	0	40
50Adc	8	8	8	8	8	8	8	8	8	8	8	0	40