

PAARSUN

NGR Routine Tests

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A) Normative Standards:

IEEE - 32 - 1972	Requirements, Terminology, and Test Procedure for Neutral Grounding Devices
IEC - 60071-1	Insulation Co-ordination
ANSI/NETA ATS,	Standard for Acceptance Testing Specifications for Electrical Power Equipment and Systems

B) Technical Specification

Type Designation		-
Resistance (Rr)		Ohm at 20°C
Rated Current (I)		[A]
Continuous Current		[A]
Rated Time		[Sec]
System Voltage [L-L]		[kV]
Rated Voltage [L-N] (Vp)		[kV]
Fault Voltage [Rr×I] (Vf)		[kV]

Number of blocks (N)		-
Degree of Protection [IP]		-
Lab. Altitude -Sea Level	1631	[m]
Altitude Correction Factor(Ka)	0.94	IEEE32 Sec.1-3-1
Temperature Coefficient (α)		[°C]
Lab. Temperature (Ta)		[°C]
Resistance Correction Factor		1+ (20-Ta) * α

C) Test Results

C1) Visual and Dimensional Check

Descriptions	Test Results	NOTES
Confirmation of Overall dimension according to <i>drawing No.:</i>	Passed ----- Failed	
Confirmation of integrity of all resistor connections.	Passed ----- Failed	
Confirmation of all components installation and connections according to <i>drawing No.:</i>	Passed ----- Failed	
Paint or coverage confirmation of Enclosure.	Passed ----- Failed	
Confirmation of accuracy & fixing of name plates and labels according to <i>drawing No.:</i>	Passed ----- Failed	

C2) Overall Resistance Test (IEEE-32 , Sec 10.1.4)

Acceptance criteria	Measuered Value (Rm)	Corrected Value to 20°C (Rc)	Test Result	NOTES
Rc = Rr ± 10%	Ω	Ω	passed ----- Failed	

C3-1) Insulation Resistance Test (ANSI/NETA ATS Table 100.1)

Acceptance criteria for VDC	block no.	Measuered Value	block no.	Measuered Value	Test Result
> M Ω	1	Ω	7	Ω	passed
	2	Ω	8	Ω	Failed
	3	Ω	9	Ω	NOTES Between H.V connection and tie rods
	4	Ω	10	Ω	
	5	Ω	11	Ω	
	6	Ω	12	Ω	

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C3-2) Insulation Resistance Test (ANSI/NETA ATS Table 100.1)

Acceptance criteria for V DC	Measured Value	Test Result		NOTES
> $G \Omega$	Ω	-----	passed Failed	Between H.V connection and frame earth

C4-1) Resistor Bank Applied Potential Test (IEEE-32 , Sec 10.3.2)

Acceptance criteria	block no.	Applied Value	block no.	Applied Value	Test Result
(kVAC, 1min) No Flash	1	(kVAC)	7	(kVAC)	passed
	2	(kVAC)	8	(kVAC)	Failed
	3	(kVAC)	9	(kVAC)	NOTES H.V connection and tie rods Ka [(Vf/N) x2.25+2]
	4	(kVAC)	10	(kVAC)	
	5	(kVAC)	11	(kVAC)	
	6	(kVAC)	12	(kVAC)	

C4-2) Resistor Bank Applied Potential Test (IEC 60071-1 Table 2.)

Acceptance criteria	Applied Value	Test Result		NOTES
(kVAC, 1min) NoFlash	(kVAC)	-----	passed Failed	Between H.V connection and frame earth

C5-1) Insulation Resistance Test (ANSI/NETA ATS Table 100.1)

Acceptance criteria for VDC	block no.	Measured Value	block no.	Measured Value	Test Result
> $M \Omega$	1	Ω	7	Ω	passed
	2	Ω	8	Ω	Failed
	3	Ω	9	Ω	NOTES Between H.V connection and tie rods
	4	Ω	10	Ω	
	5	Ω	11	Ω	
	6	Ω	12	Ω	

C5-2) Insulation Resistance Test (ANSI/NETA ATS Table 100.1)

Acceptance criteria for VDC	Measured Value	Test Result		NOTES
> $G \Omega$	Ω	-----	passed Failed	Between H.V connection and frame earth

C6) Incoming & Outgoing cable connection & integrity of Terminal box connections

Description	Test results		NOTES
Check dimension, distance and integrity of terminals in relation to final drawings.	-----	passed Failed	

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