



Appendix 1
TECHNICAL CHARACTERISTIC AND COMMITMENT
LIGHTNING ARRESTER 48KV USED FOR
INSULATED NEUTRAL LINE

No.	Description	Unit	EVN SPEC	PROTEKTEL SPEC
1.	Manufacturer			Protektel
	Product code			PROXAR-IN 44 AC
	Country of Manufacture			Poland
2.	Type		ZnO	ZnO
3.	Design Type		Zinc oxide, non-gap type	Zinc oxide, non-gap type
4.	Standard		IEC 99-4	IEC 60099-4:2014
5.	Rated Voltage	kV	Supplier's Recommendation	44
6.	Rated Frequency	Hz	50	50
7.	Neutral Grounding Condition		Isolated	Isolated
8.	Maximum Continuous Operating Voltage (MCOV)	kV	≥ 34	35,2
9.	Rated Discharge Current (8/20 μ s)	kA	10 kA	10 kA
10.	Short-circuit Current	kA	≥ 20	31,5 kA
11.	Discharge class according to IEC		Class 1	DH (Class 1)
12.	Energy Resistant	kJ/kV Uc	4	4,5
13.	Temporary Overvoltages in 1-phase short circuit mode (TOV) - Check the TOV curve of arrester	s	≥ 7200	≥ 7200
14.	Maximum residual voltage for rated discharge current, wave 8/20 μ s	kV	≤ 121	118.8
15.	Ability to withstand pulse current wave 4/10 μ s	kA	≥ 100	100
16.	Housing of lightning arrester		Contractor specify	Silicon Rubber
	- Material			LSR
	- Ability to withstand impulse voltage	KV	≥ 170	270
	- Ability to withstand industrial frequency voltage	kV	≥ 70	130
	- Minimum creepage distance	mm/kV	≥ 20	26
17.	Accessories for installation (connection fittings, grounding...)		Yes	Yes
18.	Technical documents, fabrication drawings		Yes	Yes
19.	Experimental record : Type Test and Rountine Test		Yes	Yes



Appendix 2
TECHNICAL CHARACTERISTIC AND COMMITMENT
LIGHTNING ARRESTER 35KV USED FOR
INSULATED NEUTRAL LINE

No.	Description	Unit	EVN SPEC	PROTEKTEL SPEC
1.	Manufacturer			Protektel
	Product code			PROXAR-IN 44 AC
	Country of Manufacture			Poland
2.	Type		ZnO	ZnO
3.	Design Type		Zinc oxide, non-gap type	Zinc oxide, non-gap type
4.	Standard		IEC 99-4	IEC 60099-4:2014
5.	Rated Voltage	kV	Supplier's Recommendation	44
6.	Rated Frequency	Hz	50	50
7.	Neutral Grounding Condition		Isolated	Isolated
8.	Maximum Continuous Operating Voltage (MCOV)	kV	≥ 34	35,2
9.	Rated Discharge Current (8/20μs)	kA	10 kA	10 kA
10.	Short-circuit Current	kA	≥ 20	31,5 kA
11.	Discharge class according to IEC		Class 1	DH (Class 1)
12.	Energy Resistant	kJ/kV Uc	4	4,5
13.	Temporary Overvoltages in 1-phase short circuit mode (TOV) - Check the TOV curve of arrester	s	≥ 7200	≥ 7200
14.	Maximum residual voltage for rated discharge current, wave 8/20μs	kV	≤ 121	118.8
15.	Ability to withstand pulse current wave 4/10μs	kA	≥ 100	100
16.	Housing of lightning arrester		Contractor specify	Silicon Rubber
	- Material			LSR
	- Ability to withstand impulse voltage	KV	≥ 170	270
	- Ability to withstand industrial frequency voltage	kV	≥ 70	130
	- Minimum creepage distance	mm/kV	≥ 20	26
17.	Accessories for installation (connection fittings, grounding...)		Yes	Yes
18.	Technical documents, fabrication drawings		Yes	Yes
19.	Experimental record : Type Test and Rountine Test		Yes	Yes



Appendix 3A
TECHNICAL CHARACTERISTIC AND COMMITMENT
LIGHTNING ARRESTER 22KV USED FOR STAR CONNECTION LINE, 3
PHASE 3 WIRE, EARTHED NEUTRAL DIRECTLY IN SOURCE

No.	Description	Unit	EVN SPEC	PROTEKTEL SPEC
1.	Manufacturer			Protektel
	Product code			PROXAR-IN 24 AC
	Country of Manufacture			Poland
2.	Type		ZnO	ZnO
3.	Design Type		Zinc oxide, non-gap type	Zinc oxide, non-gap type
4.	Standard		IEC 99-4	IEC 60099-4:2014
5.	Rated Voltage	kV	Supplier's Recommendation	24
6.	Rated Frequency	Hz	50	50
7.	Maximum Continuous Operating Voltage (MCOV)	kV	≥ 19.2	19,2
8.	Rated Discharge Current (8/20μs)	kA	10 kA	10 kA
9.	Short-circuit Current	kA	≥ 20	31,5
10.	Discharge class according to IEC		Class 1	DH (Class 1)
11.	Energy Resistant	kJ/kV Uc	4	4,5
12.	Temporary Overvoltages in 1-phase short circuit mode (TOV) - Check the TOV curve of arrester	s	≥ 10	≥ 10
13.	Maximum residual voltage for rated discharge current, wave 8/20μs	kV	≤ 89	64,8
14.	Ability to withstand pulse current wave 4/10μs	kA	≥ 100	100
15.	Housing of lightning arrester		Contractor specify	Silicon Rubber
	- Material			LSR
	- Ability to withstand impulse voltage	KV	≥ 125	174
	- Ability to withstand industrial frequency voltage	kV	≥ 50	84
	- Minimum creepage distance	mm/kV	≥ 20	≥ 31
16.	Accessories for installation (connection fittings, grounding...)		Yes	Yes
17.	Technical documents, fabrication drawings		Yes	Yes
18.	Experimental record : Type Test and Rountine Test		Yes	Yes

Appendix 3B
TECHNICAL CHARACTERISTIC AND COMMITMENT
LIGHTNING ARRESTER 22kV USED FOR STAR CONNECTION, 3
PHASE 3 WIRE, INSULATED NEUTRAL LINE

No.	Description	Unit	EVN SPEC	PROTEKTEL SPEC
1.	Manufacturer			Protektel
	Product code			PROXAR-IN 24 AC
	Country of Manufacture			Poland
2.	Type		ZnO	ZnO
3.	Design Type		Zinc oxide, non-gap type	Zinc oxide, non-gap type
4.	Standard		IEC 99-4	IEC 60099-4:2014
5.	Rated Voltage	kV	Supplier's Recommendation	24
6.	Rated Frequency	Hz	50	50
7.	Maximum Continuous Operating Voltage (MCOV)	kV	≥ 19.2	19,2
8.	Rated Discharge Current (8/20 μ s)	kA	10 kA	10
9.	Short-circuit Current	kA	≥ 20	31,5
10.	Discharge class according to IEC		Class 1	DH (Class 1)
11.	Energy Resistant	kJ/kV Uc	4	4,5
12.	Temporary Overvoltages in 1-phase short circuit mode (TOV) - Check the TOV curve of arrester	s	≥ 7200	≥ 7200
13.	Maximum residual voltage for rated discharge current, wave 8/20 μ s	kV	≤ 89	64,8
14.	Ability to withstand pulse current wave 4/10 μ s	kA	≥ 100	100
15.	Housing of lightning arrester		Contractor specify	Silicon Rubber
	- Material			LSR
	- Ability to withstand impulse voltage	KV	≥ 125	174
	- Ability to withstand industrial frequency voltage	kV	≥ 50	84
	- Minimum creepage distance	mm/kV	≥ 20	≥ 31
16.	Accessories for installation (connection fittings, grounding...)		Yes	Yes
17.	Technical documents, fabrication drawings		Yes	Yes
18.	Experimental record : Type Test and Rountine Test		Yes	Yes



Appendi 4
TECHNICAL CHARACTERISTIC AND COMMITMENT
LIGHTNING ARRESTER 10KV USED FOR INSULATED NEUTRAL LINE

No.	Description	Unit	EVN SPEC	PROTEKTEL SPEC
1.	Manufacturer			Protektel
	Product code			PROXAR-IN 15 AC
	Country of Manufacture			Poland
2.	Type		ZnO	ZnO
3.	Design Type		Zinc oxide, non-gap type	Zinc oxide, non-gap type
4.	Standard		IEC 99-4	IEC 60099-4:2014
5.	Rated Voltage	kV	Supplier's Recommendation	12
6.	Rated Frequency	Hz	50	50
7.	Neutral Grounding Conditions		Isolated	Isolated
8.	Maximum Continuous Operating Voltage (MCOV)	kV	≥ 9.6	9,6
9.	Rated Discharge Current (8/20μs)	kA	10	10
10.	Short-circuit Current	kA	≥ 20	31,5
11.	Discharge class according to IEC		Class 1	DH (Class 1)
12.	Energy Resistant	kJ/kV Uc	4	4,5
13.	Temporary Overvoltages in 1-phase short circuit mode (TOV) - Check the TOV curve of arrester	s	≥ 7200	≥ 7200
14.	Maximum residual voltage for rated discharge current, wave 8/20μs	kV	≤ 53	27
15.	Ability to withstand pulse current wave 4/10μs	kA	≥ 100	100
16.	Housing of lightning arrester		Contractor specify	Silicon Rubber
	- Material			LSR
	- Ability to withstand impulse voltage	KV	≥ 75	88
	- Ability to withstand industrial frequency voltage	kV	≥ 28	42
	- Minimum creepage distance	mm/kV	≥ 20	36
17.	Accessories for installation (connection fittings, grounding...)		Yes	Yes
18.	Technical documents, fabrication drawings		Yes	Yes
19.	Experimental record : Type Test and Rountine Test		Yes	Yes

Appendix 5
TECHNICAL CHARACTERISTIC AND COMMITMENT
LIGHTNING ARRESTER 6KV USED FOR INSULATED NEUTRAL LINE

No.	Description	Unit	EVN SPEC	PROTEKTEL SPEC
1.	Manufacturer			Protektel
	Product code			PROXAR-IN 9 AC
	Country of Manufacture			Poland
2.	Type		ZnO	Yes
3.	Design Type		Zinc oxide, non-gap type	Zinc oxide, non-gap type
4.	Standard		IEC 99-4	IEC 60099-4:2015
5.	Rated Voltage	kV	Supplier's Recommendation	9,0
6.	Rated Frequency	Hz	50	50
7.	Neutral Grounding Conditions		Isolated	Isolated
8.	Maximum Continuous Operating Voltage (MCOV)	kV	≥ 7.2	7,2
9.	Rated Discharge Current (8/20 μ s)	kA	10	10
10.	Short-circuit Current	kA	≥ 20	31,5 kA
11.	Discharge class according to IEC		Class 1	DH (Class 1)
12.	Energy Resistant with single pulse	kJ/kV Uc	4	4,5
13.	Temporary Overvoltages in 1-phase short circuit mode (TOV) - Check the TOV curve of arrester	s	≥ 7200	≥ 7200
14.	Maximum residual voltage for rated discharge current, wave 8/20 μ s	kV	≤ 42	24,3
15.	Ability to withstand pulse current wave 4/10 μ s	kA	≥ 100	100
16.	Housing of lightning arrester		Contractor specify	Silicon Rubber
	- Material			LSR
	- Ability to withstand impulse voltage	KV	≥ 60	54*
	- Ability to withstand industrial frequency voltage	kV	≥ 20	26
	- Minimum creepage distance	mm/kV	≥ 20	26,8
17.	Accessories for installation (connection fittings, grounding...)		Yes	Yes
18.	Technical documents, fabrication drawings		Yes	Yes
19.	Experimental record : Type Test and Routine Test		Yes	Yes



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BANK INFORMATION

Company Bank:

Bank Swift Code: VPBKVNXX
Bank Account (VND): 97311366
At Bank: Vietnam Prosperity Joint Stock
Commercial Bank (VPBank)
Owner: Tascom Viet Nam Company Limited

Individual Bank:

Bank Account: 8989.88888
At Bank: Vietnam Prosperity Joint Stock
Commercial Bank (VPBank)
Owner: Nguyen Thanh Nam