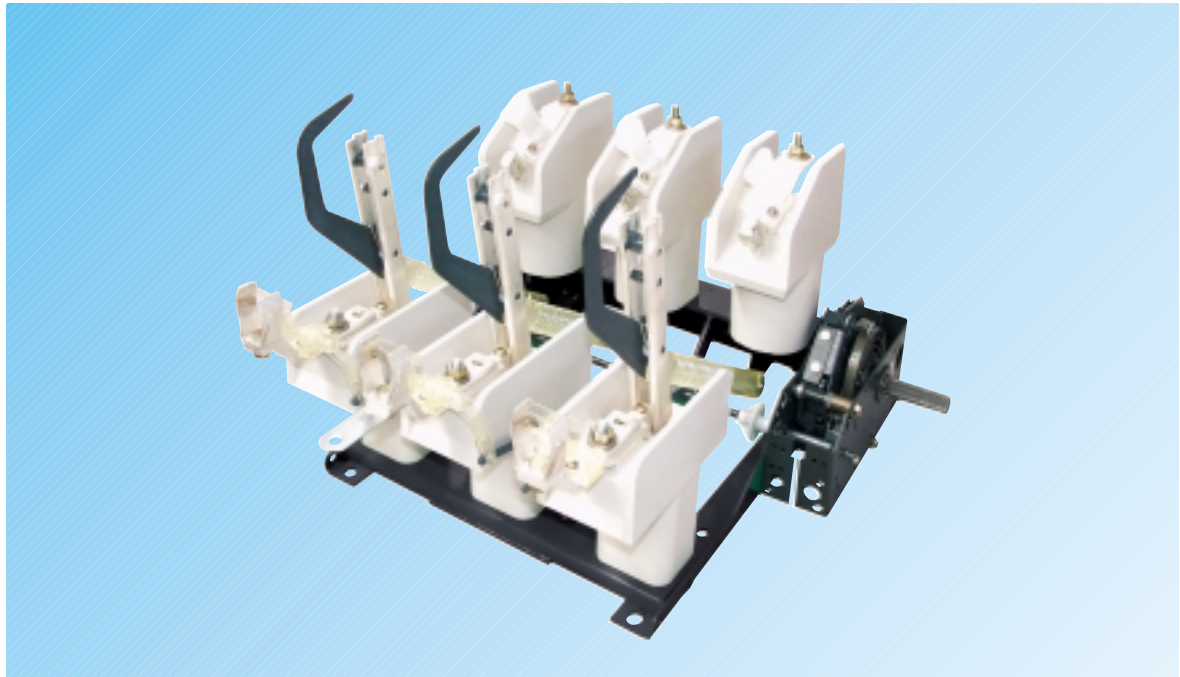


Indoor Air Switch Disconnecter, NAL

Rated voltage: 12-40.5 kV

Rated current: 400-1250 A

Catalogue 1YMR602130-en



Based on a modular principle

Applications

- as line and transformer switches within distribution networks
- as motor switches
- as capacitor switches

3-pole switch disconnecter
and switch fuse combination

Optional automatic fuse tripping

Optional fuse base on the
opening side

More than 550 000 units in
service world wide

Manufactured according to
ISO 9001 and ISO 14001

Accessories can easily be
added

Technical specification Switch disconnecter type NAL															
Rated voltage	Un	kV	12 kV			17,5 kV			24 kV			36 kV		40,5 kV	
Rated current	In	A	400	630	1250	400	630	1250	400	630	1250	630	800	630	800
Max. rated current	I	A	400	630	1150	400	630	1150	400	630	1150	630	800	630	800
Short circuit making capacity	I _{ma}	kA peak	67	67	67	50	50	50	50	50	50	50	50	50	50
Peak withstand current*	I _{dyn}	kA peak	82	82	82	82	82	82	62,5	62,5	82	66	66	66	66
Short time current	1 sec.	I _{th}	kA eff	31,5	31,5	31,5	31,5	31,5	25	25	31,5	25	25	25	25
	2 sec.	"	"	"	"	"	"	"	20	20	25	25	25	25	25
	3 sec.	"	"	20	20	20			16	16	16				
Mainly active load breaking capacity (test duty 1 and 2, IEC 60265-1(IEC 265))	I	A	400	630	1250	400	630	1250	400	630	1250	630	800	630	800
Mainly capacitive breaking capacity (test duty 4, IEC 60265-1(IEC 265))	I	A	150	150	150	45	45	45	80	80	80	50	50	50	50
Mainly inductive breaking capacity cosφ = 0,15	A	A	16	16	16	16	16	16	16	16	16	16**	16**	16**	16**
Rated earth fault breaking capacity, IEC 60265-1(IEC 265))															
Earth fault breaking capacity, fig. 6	I	A	150	150	150	70	70	70	55	55	55	50	50	50	50
Capacitive breaking capacity, fig. 7	I	A	90	90	90	40	40	40	31,5	31,5	31,5	50	50	50	50
Max. breaking capacity in co-operation with fuses IEC 62271-105 (IEC 420 1990-11)		A	1600	1600		1600	1600		900	900		300	300	300	300
Max. fuse size	In	A	125	125		125	125		80	80		40	40	40	40
Power frequency withstand voltage 50 Hz 1 min. - to earth and between poles - across isolating distance		kV	42			45			55			80		95	
		kV	45			60			70			88		120	
Impulse withstand voltage 1,2/50µs. - to earth and between poles - across isolating distance		kV	75			95			125			170		190	
		kV	85			110			145			195		220	
Pole distance	P	mm	150, 170 and 210			170 and 210			170***, 235 and 275			360			
Max. operating torque at: - closing K/A mech. - opening K/A mech.		Nm	115-120 Nm						80-100 Nm						
		Nm	K-mech. 120 Nm/A-mech. 3 Nm						K-mech. 80-100 Nm/A-mech. 3 Nm						
Operating angle on the shaft		degrees	130						120						
Operating time		ms	40 - 60						60						

* - for peak withstand current over 62,5 kA with reinforced frame (NAL 17,5 kV and 24 kV)

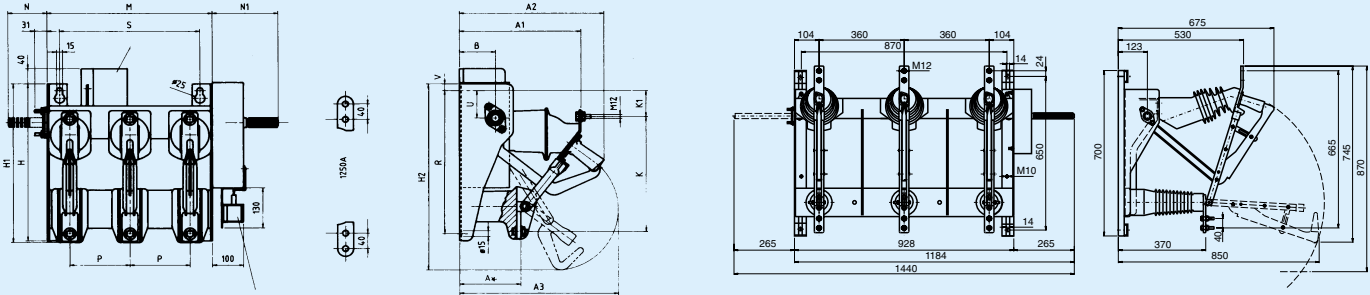
** - power factor = 0,1

*** - with insulating barriers

Dimensional drawings switch disconnecter with mechanism

NAL 12, 17,5 and 24 kV

NAL 36 kV and 40.5 kV



Type	A	A ₁	A ₂	A ₃	B	H	H ₁	H ₂	K	K ₁	M	N	N ₁	P	R	S	U	V
NAL 12-A/K/KS, P=150	166	320	362	394	90	422	428	510	310	63	412	122	164	150	375	350	75	33
NAL 12-A/K/KS, P=170	166	320	362	394	90	422	428	510	310	63	452	122	164	170	375	390	75	33
NAL 17,5-A/K/KS, P=170	225	375	418	511	98	534	577	600	441	87	452	122	164	170	500	395	90	18
NAL 24-A/K/KS, P=170	225	375	418	511	98	534	577	600	441	87	452	186	202	170	500	395	90	18
NAL 12-A/K/KS, P=210	166	320	362	394	90	422	428	510	310	63	532	122	164	210	375	470	75	33
NAL 17,5-A/K/KS, P=210	225	375	418	511	98	534	577	600	441	87	532	122	164	210	500	470	90	18
NAL 24-A/K/KS, P=235	225	375	418	511	98	534	577	600	441	87	582	186	202	235	500	525	90	18
NAL 24-A/K/KS, P=275	225	375	418	511	98	534	577	600	441	87	662	186	202	275	500	605	90	18

ABB is working to continuously improve the products. Therefore we reserve the right to change design, dimension and data without prior notice.



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