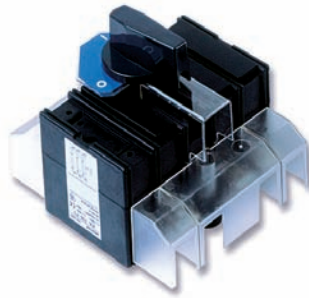




RA100P3/OHB
+cable terminal shrouds



RA100P3/R
+cable terminal shrouds



RAB1P3/OHY
+fuse link shroud



RAB2P3/OHY
+fuse link shroud

R type series is divided into two groups:

- RA switch disconnectors
 - 3-pole with optional neutral (N) 4th pole
 - RA100 - 4th pole switchable
- RAB switch disconnectors fuses
 - 3-pole with optional neutral (N) 4th pole
 - RAB000 - 4th pole switchable

GENERAL INFORMATION

- safety of service and easy installation,
- self-extinguishing thermoplastics (VO flammability class),
- silver plated parts of current circuits,
- self-tightening and self-cleaning contacts,
- high electrical and mechanical endurance,
- high short-circuit making and breaking capacity,
- double, safe clearance between open contacts,
- complete isolation of fuse links in „off” position,
- manually operated drive (spring powered),
- wide range of accessories.

APPLICATIONS

Switch disconnectors series **R** are designed for distribution of electricity and protection against short circuits and overloads in three phase alternative current circuits. They can be used as:

- main switch disconnector in distribution boards,
- switch disconnector,
- switch disconnector for motor control and protection.

OPERATING CONDITIONS

- to be installed in the room free of any dust, aggressive or explosive gases,
- for moderate, marine and tropical climate,
- ambient temperature from -25°C to +55°C,
- altitude up to 2000 meters above sea level,
- outdoor – in cabinets with protection degree > IP 34.

CONSTRUCTION AND OPERATION

RA switch disconnectors and **RAB** switch disconnectors fuses consists of following parts:

- bottom part of the body with fitted current circuits (stationary contacts, cable terminals)
- top part of the body with fitted contacts (**RA**) or spring loaded contacts for fuse link blades (**RAB**)
- traverse with moving contacts
- manually operated drive (spring powered)

Current circuit of each phase has four clearances between contacts in switched off position(double clearance for each pair of contacts, two pairs of contacts for each phase phase) ensuring required isolating distance and safe replacement of fuse links in **RAB** switch disconnectors fuses. Manually triggered, springpowered drive delivers rapid switching. **RA** switch disconnectors and **RAB** switch disconnectors fuses can be equipped with two types of handles:

- R type - installed on disconnector's shaft
- OHB, OHY type - for installation on distribution board's door

Handle position indicates disconnector's state - switched on or switched off. OHB and OHY handles are designed for locking by up to three padlocks in OFF („O”) position. Handles are available in colours black and yellow-red. Wide range of accesories is available for **RA** switch disconnectors and **RAB** switch disconnectors fuses like additional shafts, shaft joints, auxiliary switches, cable terminal shrouds, fuse link shrouds, etc.

INSTALLATION

RA switch disconnectors and **RAB** switch disconnectors fuses are designed for operation in horizontal or vertical position with permissible deviation of 30° in any direction. **RA** switch disconnectors and **RAB** switch disconnectors fuses should be mounted to support structure with screws with spring washers.

Table 119. Screw terminals tightening torque

Screw	M6	M8	M10	M12
Tightening torque	7 Nm	14 Nm	24 Nm	38 Nm

Table 120. RA technical data

Article	Unit	RA 100	RA 160	RA 250	RA 400	RA 630	RA 1250
Parameter		Value					
Rated thermal current	I_{th} A	100	160	250	400	630	1250
Rated insulation voltage	U_i V	1000					
Rated impulse withstand voltage	U_{imp} kV	8					
Rated frequency	Hz	50 ÷ 60					
Rated switching current for AC 22A $U_e = 690$ V	I_e A	100	125	125	250	400	-
Rated switching current for AC 22B $U_e = 690$ V	I_e A	-	-	-	400	630	-
Rated switching current for AC 22A $U_e = 500$ V	I_e A	-	-	-	-	-	1250
Rated switching current for AC 22B $U_e = 415$ V	I_e A	-	-	250	-	-	-
Rated switching current for AC 23A $U_e = 500$ V	I_e A		160	160	-	-	-
Rated switching current for AC 23A $U_e = 690$ V	I_e A	40	-	-	-	-	-
Rated short-circuit making capacity	I_{cm} kA _{max}	7	9	20	25	35	100
Rated short-time withstand current 1 s	I_{cw} kA	2,5	8	8	15	15	50
Mechanical durability	number of cycles	10000	8000	8000	5000	5000	3000
Electrical durability at utilization category AC 22 A		1500	1000	1000	1000	1000	500
Duty	-	Continuous duty					
Protection degree IP	-	IP 00					
Weight	kg	0,95	1,7	1,85	3,3	4,3	12,5
Busbar cross-section	mm ²	15 x 2	20 x 4	25 x 4	2 x 25 x 4	2 x 30 x 5	60 x 10
Cable conductor cross-section	mm ²	35	95	120	240	2 x 185	-

Table 121. RA switch disconnectors with standard cable terminals

Type	I _n	Number of poles	Accessories*	Article	Article No.
RA 100	100 A	3	-	RA 100 P3	on request
		3 + N	-	RA 100 P3 N	63-823064-091
		4	-	RA 100 P4	on request
		3	R1	RA 100 P3/R	on request
		3 + N	R1	RA 100 P3 N/R	63-823064-211
RA 160	160 A	4	R1	RA 100 P4/R	on request
		3	-	RA 160 P3	63-822982-011
		3 + N	-	RA 160 P3 N	on request
RA 160	160 A	3	R1	RA 160 P3/R	63-822982-051
		3 + N	R1	RA 160 P3 N/R	on request
		3	-	RA 250 P3	63-822982-021
RA 250	250 A	3 + N	-	RA 250 P3 N	on request
		3	R1	RA 250 P3/R	63-822982-061
		3 + N	R1	RA 250 P3 N/R	on request
RA 400	400 A	3	-	RA 400 P3	63-811593-011
		3 + N	-	RA 400 P3 N	on request
		3	R1	RA 400 P3/R	63-811593-051
		3 + N	R1	RA 400 P3 N/R	on request
RA 630	630 A	3	-	RA 630 P3	63-811593-021
		3 + N	-	RA 630 P3 N	on request
		3	R1	RA 630 P3/R	63-811593-061
RA 630	630 A	3 + N	R1	RA 630 P3 N/R	on request
		3	-	RA 1250 P3	63-811601-011
		3 + N	-	RA 1250 P3 N	63-811601-021
RA 1250	1250 A	3	R1	RA 1250 P3/R	63-811601-031
		3 + N	R1	RA 1250 P3 N/R	63-811601-041

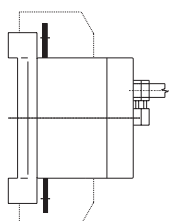
* R1 - handle mounted on shaft

CAUTION! N - 4th pole unswitchable, switchable 4th pole available only for RA100 type switch disconnectors

Table 122. RA switch disconnectors with „A” type cable terminals

Type	I _n	Number of poles	Accessories*	Article	Article No.
RA 100	100 A	3	-	RA 100 P3 A	63-823064-021
		3 + N	-	RA 100 P3 NA	63-823064-101
		4	-	RA 100 P4 A	63-823064-061
		3	R1	RA 100 P3 A/R	63-823064-141
		3 + N	R1	RA 100 P3 NA/R	63-823064-221
RA 160	160 A	4	R1	RA 100 P4 A/R	63-823064-181
		3	-	RA 160 P3 A	63-823165-011
		3 + N	-	RA 160 P3 NA	63-823165-021
RA 160	160 A	3	R1	RA 160 P3 A/R	63-823165-131
		3 + N	R1	RA 160 P3 NA/R	63-823165-141
		3	-	RA 250 P3 A	63-823165-031
RA 250	250 A	3 + N	-	RA 250 P3 NA	63-823165-041
		3	R1	RA 250 P3 A/R	63-823165-151
		3 + N	R1	RA 250 P3 NA/R	63-823165-161
RA 400	400 A	3	-	RA 400 P3 A	63-811618-011
		3 + N	-	RA 400 P3 NA	63-811618-031
		3	R1	RA 400 P3 A/R	63-811618-131
		3 + N	R1	RA 400 P3 NA/R	63-811618-151
RA 630	630 A	3	-	RA 630 P3 A	63-811618-021
		3 + N	-	RA 630 P3 NA	63-811618-041
		3	R1	RA 630 P3 A/R	63-811618-141
RA 630	630 A	3 + N	R1	RA 630 P3 NA/R	63-811618-161

* R1 - handle mounted on shaft

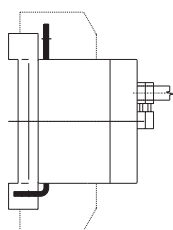


RA 100 P3



RA 100 P3/R

A



RA 250 P3 A

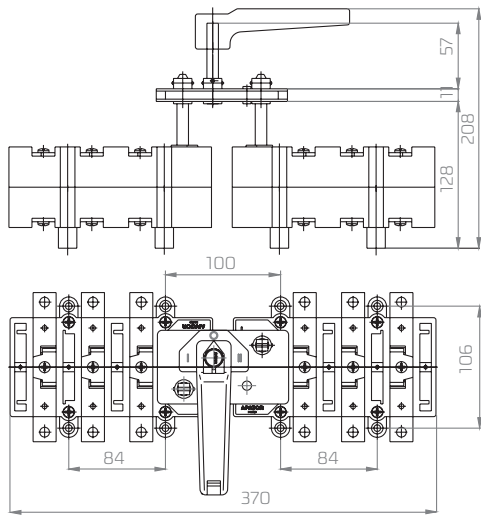
CHANGE-OVER SWITCHES I-O-II



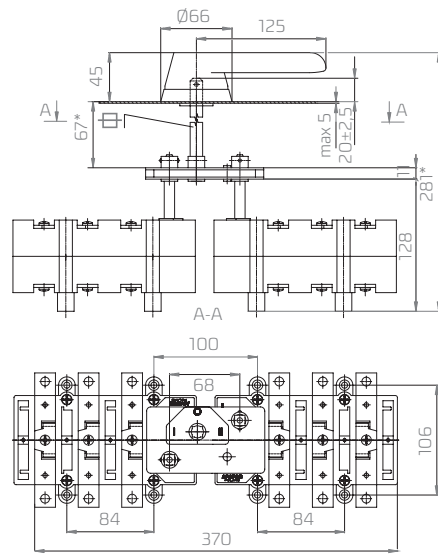
2 x RA 160 P3

I - O - II	Poles	I _n	Article No. of RA switch	Article No. of coupling mechanism	
				handle mounted on shaft	handle OHB mounted on distribution board's door
160	3	160 A	2 x RA 160 P3 (63-822982-011)	+63-839949-011	+63-839949-021
250	3	250 A	2 x RA 250 P3 (63-822982-021)	+63-839949-011	+63-839949-021
400	3	400 A	2 x RA 400 P3 (63-811593-011)	+63-839972-011	+63-839972-021
630	3	630 A	2 x RA 630 P3 (63-811593-021)	+63-839972-011	+63-839972-021
1250	3	1250 A	2 x RA 1250 P3 (63-811601-011)	+63-930893-011	+63-930893-021

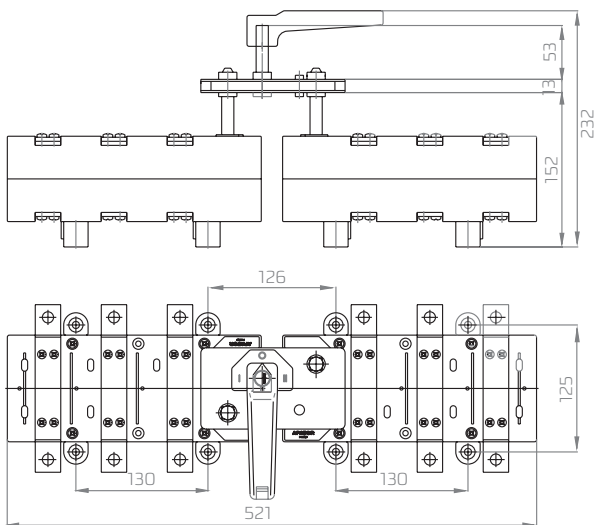
Dimensions of change-over switch I-O-II



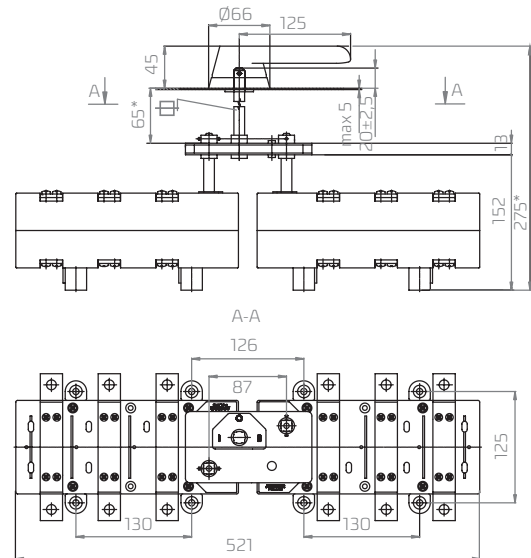
160 A - 250 A



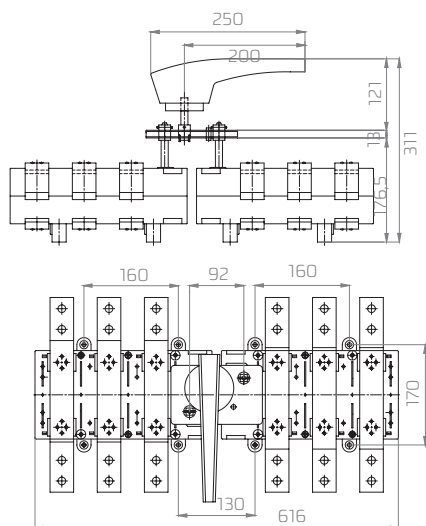
160 A - 250 A



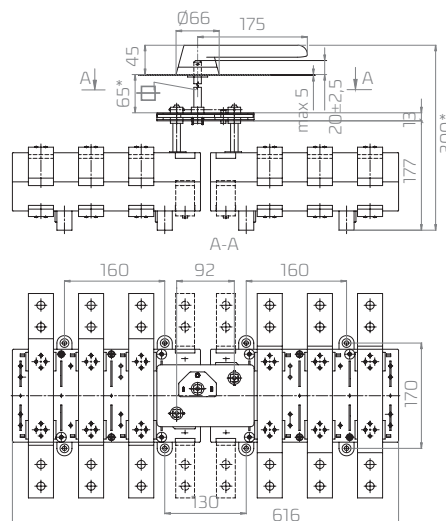
400 A - 630 A



400 A - 630 A



1250 A
handle mounted on shaft

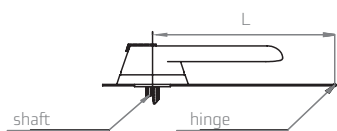


1250 A
handle mounted on distribution board's door

Enclosures for RA type switch disconnectors	Order No.	
	ENSTO	HENSEL
For RA 100..., RAB 000...		
Enclosure with gray cover	OABP 203013 G	Mi 80101
Enclosure with transparent cover	OABP 203013 T	Mi 80100
Mounting plate	OMP 2030	
Distance parts	OELA 1.04	
Mounting plate	OMP 2030	
Distance parts	OELA 1.04	
For RA 160..., 250...		
Enclosure with gray cover	OABP 303018 G	Mi 80201
Enclosure with transparent cover	OABP 303018 T	Mi 80200
Mounting plate	OMP 3030	
Distance parts	OELA 1.04	
For RA 400..., 630...		
Enclosure with gray cover	OABP 304018 G	Mi 80211
Enclosure with transparent cover	OABP 304018 T	Mi 80210
Mounting plate	OMP 3040	
Distance parts	OELA 1.04	

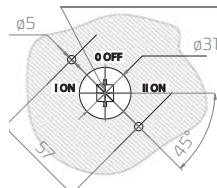
* R1 handle mounted on shaft

L-minimal distance between shaft and door's hinge



hole in enclosure's cover for mounting of OHB handles

mounting position of shaft and shaft's pin



Switch disconnector	Length [mm]	Handle
RA 100	80	OH...65 J8
RAB 000		
RA 160/250	120	OH...95 J10
RAB 00		
RA 400/630	150	OH...125 J12
RAB 1/2		
RAB 3	200	OH...145 J12
RA 1250	200	OH...175 J12