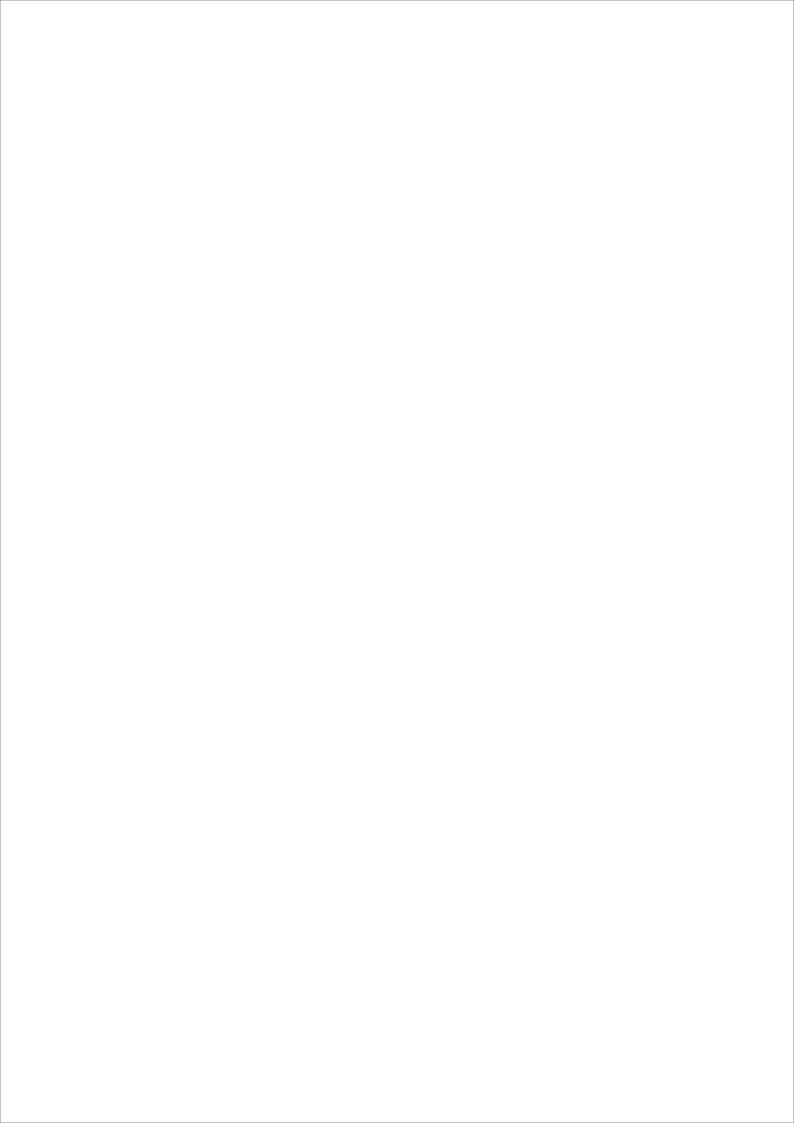




# Switch-Disconnector-Fuse Switch-Disconnector Type FN





#### **About us**

Larsen & Toubro is a technology-driven company that infuses engineering with imagination. The Company offers a wide range of advanced solutions in the field of Engineering, Construction, Electrical & Automation, Machinery and Information Technology.

L&T Switchgear, which forms part of the Electrical & Automation business, is India's largest manufacturer of low voltage switchgear, with the scale, sophistication and range to meet global benchmarks. With over five decades of experience in this field, the Company today enjoys a leadership position in the Indian market with growing presence in International markets.

It offers a complete range of products including controlgear, powergear, motor starters, energy meters, wires and host of other accessories. Most of our product lines conform to International standards, carry € markings and are KEMA certified.

L&T offers a wide range of switch disconnector fuse for manual operation. The range of SDF conforms to the latest IEC/IS standards. The products are in line with design and quality standard associated with L&T Switchgear products.



Switchgear Factory, Mumbai



Switchgear Factory, Ahmednagar

#### Salient Features of SDF

#### **Features of FN series:**

- Compact design saves space
- Electrodynamic compensation
- · Quad break contact system
- Full AC 23 A rating for the complete range
- Highest fused short circuit capacity
- Quick make / Quick break / Positive break
- Clear ON / OFF indicator
- Separate arcing / Current carrying zone
- · High clearance & creepages
- Separate bridge for each pole
- Maximum ground clearance
- Phase barrier & Terminal Shroud as a standard accessory
- Fuse stationary & isolated from both sides
- Direct access to mounting & terminal screws
- · Generous terminal capacity
- Replaceable contacts for enhanced life
- Suitable for vertical & horizontal orientation
- Wide range of Spares & Accessories
- Handle coupling as per IS 8623



Easy fixing of handle on panel door by two screws.

Door interlock for safety of operating personnel when switch is 'ON'. The interlock can be defeated if required.

Built-in padlocking arrangement to lock the unit in either 'ON' or 'OFF' position.

The handle coupling can take a mismatch or ± 3mm in all directions.

Clear ON / OFF indication is provided on the switch (by a red pointer).



Switch-Disconnector-Fuse consists of an integral neutral, making the units suitable for 3 phase, 4 - wire application. FN 32 / 63 has switched neutral while higher ratings have isolable neutral.

switch which saves panel space.

**Compact construction:** 

To ensure light weight

low operating torque

Interface barriers Easy to maintain contacts. the possibility of

interface short circuit.

### **Phase barriers:**

are provided to eliminate

Fuses remain stationary during switching operation.

Fuses are isolated from both

Large ground clearance

to eliminate possibility of

phase-ground flash over.

personnel while replacing fuses.

**Contact System:** 

Contact system is QUAD BREAK. There are no. of parallel moving contacts per pole per break. Hence, better arc quenching & more electrical life of contacts. Each pole has separate bridge carrying the moving contacts, achieving a high order of interphase separation & avoiding phase-phase flash over.



#### **Terminal shrouds:**

The terminals can be shrouded for protection against phase-phase short circuit through an external conducting path and also for protection against accidental human contact with live terminals.

#### Terminals:

To accommodate Aluminium bus bars.



#### **SDF Interior in Sheet Steel Enclosure:**

Complete range of SDF is also available in attractive powder coated sheet steel enclosures. FN 32 / 63 in sheet steel enclosure comes fitted with gland plate.

Mechanism: This mechanism is front operated quick-make / quick-break and independent of speed of operation.

High making & breaking capacity

due to quad break construction.

High Electrical & Mechanical life.

The Switch-Disconnector-Fuse units can be mounted at any angle in a vertical plane.

# **Technical Data**

# Switch-Disconnector-Fuse Units - Type FN

Conforms to IS13947 (part-3) / IEC60947-3

Tyr	e Designation		FN 32	FN 63	FN 100	FN 125
	of Poles		3+Neutral	3+Neutral	3+Neutral	3+Neutral
Nei	utral #	Switched	Switched	Isolable	Isolable	
Ser	vice temperature		-20 to 50	-20 to 50	-20 to 50	-20 to 50
Rat	ed operational voltage (U <sub>e</sub> )		415	415	415	415
Rat	ed insulation voltage (U <sub>i</sub> )	°C	690	690	690	690
Rat	ed impulse withstand voltage (U <sub>imp</sub> )	V	8	8	8	8
Rat	ed frequency	V	50 - 60	50 - 60	50 - 60	50 - 60
Coi	nventional enclosed thermal current at 40°0	C (I <sub>the</sub> ) kV	32	63	100	125
Rat	ed operational current (I <sub>o</sub> ) at AC - 23 A	Hz	32	63	100	125
Rat	ed making capacity (436 V, cosØ = 0.35)	А	320	630	1000	1250
Rat	ed breaking capacity (436 V, cosØ = 0.35)	А	256	504	800	1000
Me	chanical life (Operating cycles)	А	15000	15000	15000	15000
Ter	minal capacity (main)	А	35	35	95	95
Ter	minal capacity (neutral)	mm²	35	35	50	50
Ter	minal screw	mm	M 6 x 12	M 6 x 12	M 8 x 20	M 8 x 20
Cap	pacitor duty - 415 V, 50 - 60 Hz	kVAr	14	29	45	57
DC	Rating at 220 V DC					
No.	of poles in series, utilization category at ra	ated current	3, DC-23 A	3, DC-23 A	2, DC-23 A	2, DC-23 A
Sui	table L&T fuse					
N O	Rated fused short circuit current	kA	80**	80**	100	100
	Rating	A / Type / Size	32 / HF / 14 x 51	63 / HF / 14 x 51	100 / HN / 00	125 / HN / 00
BS	Rated fused short circuit current	kA	80	80	80	80
В	Rating	A / Type / Size	32 / HQ / A1L	63 / HQ / A1L	100 / HQ / A3 & A4	125 / HQ /A4

FN 160	FN 200	FN 250	FN 315	FN 400	FN 630	FN 800
3+Neutral	3+Neutral	3+Neutral	3+Neutral	3+Neutral	3+Neutral	3+# Neutral
Isolable	Isolable	Isolable	Isolable	Isolable	Isolable	Isolable
-20 to 50	-20 to 50	-20 to 50	-20 to 50	-20 to 50	-20 to 50	-20 to 50
415	415	415	415	415	415	415
690	690	690	690	690	690	690
8	8	8	8	8	8	8
50 - 60	50 - 60	50 - 60	50 - 60	50 - 60	50 - 60	56-60
160	200	250	315	630	630	800
160	200	250	315	630	630	800
1600	2000	2500	3150	6300	6300	8000
1280	1600	2000	2520	5040	5040	6400
15000	10000	100000	10000	10000	10000	10000
185	240	240	400	2 x 400	2 X 625	2 X 625
50	120	120	240	240	400	400
M 8 X M 20	M 10 x 30	M 10 x 30	M 10 x 30	M12 x 40	M 16 x 50	M 16 x 50
57	92	115	145	240	270	270
2, DC-23 A	2, DC-23 A	2, DC-23 A	2, DC-23 A	2, DC-23 A	2, DC-23 A	2, DC-23 A
100	100	100	100	100	100	100
160 / HN / 00	200 / HN / 0	250 / HN / 1	315 / HN / 1	400 / HN / 2	630 / HN / 3	800 / HN / 3
80	80	80	80	80	80	
160 / HQ / A4	200 / HQ / B2	250 / HQ / B2 & B3	315 / HQ / B3	400 / HQ / B4	630 / HQ / C2	

# **Ordering Information**

Ordering Suffix OOOO for all \* Example: FN 32 Interior with handle \* Ordering Information - **SK95518OOOO** 

Description	FN 32	FN 63	FN 100	FN 125
SDF suitable for DIN Fuses				
Interior with handle TPN	SK95518	SK95421	SK95568	SK95001
Interior in sheet steel enclosure	SK95612	SK95613	SK95569	SK95005
Interior with handle TP			ST30287	ST27894
SDF Suitable for BS Fuses				
Interior with handle TPN	SK95653	SK95651	SK95570	SK95009

FN 160	FN 200	FN 250	FN 315	FN 400	FN 630	FN 800
SK95713	SK95418	SK95642	SK95461	SK95481	SK95521	SK95679
SK95715	SK95511	SK95681	SK95514	SK95515	SK95547	SK95705
SK95998	ST27895	ST31731	ST27897	ST27898	ST27899	ST31732
SK95714	SK95588	SK95682	SK95590	SK95591	SK95592	

<sup>\* ------</sup> Power factor = 0.45 as required in IS 13947 - (part 3).
# ------ For FN 125 to FN 800 Switched - Neutral is available as accessory.
\*\* ------ Suitable for cylindrical fuses.

# **Technical Data**

Switch-Disconnector - Type FN Conforms to IS13947 (part-3) / IEC60947-3

Type Designation		FN 32	FN 63	FN 100	FN 125
No. of Poles		3+Neutral	3+Neutral	3+Neutral	3+Neutral
Neutral		Switched	Switched	Isolable	Isolable
Service temperature	°C	-20 to 50	-20 to 50	-20 to 50	-20 to 50
Rated operational voltage (U <sub>e</sub> )	V	415	415	415	415
Rated insulation voltage (U <sub>i</sub> )	V	690	690	690	690
Rated impulse withstand voltage (U <sub>imp</sub> )	kV	8	8	8	8
Rated frequency	Hz	50 - 60	50 - 60	50 - 60	50 - 60
Conventional enclosed thermal current at 40°C (I <sub>the</sub> )	Α	32	63	100	125
Rated operational current (I <sub>o</sub> )	'				
AC 20 A utilization category	Α	32	63	100	125
AC 21 A utilization category	Α	32	63	100	125
AC 22 A utilization category	Α	32	63	100	125
AC 23 A utilization category	Α	32	63	100	125
Rated making capacity (436 V, cosØ = 0.35)	Α	320	630	1000	1250
Rated breaking capacity (436 V, cosØ = 0.35)	Α	256	504	800	1000
Capacitor duty - 415 V 50 - 60 Hz	kVAr	14	29	45	57
Mechanical life (Operating cycles)		15000	15000	15000	15000
Terminal capacity (main)	mm²	35	35	95	95
Terminal capacity (neutral)	mm²	35	35	50	50
Terminal screw	mm	M 6 x 12	M 6 x 12	M 8 x 20	M 8 x 30
Short circuit withstand current (without fuses) for 1 sec	kA	1.5	1.5	4	4
DC Rating at 220 V DC					
No. of poles in series, utilization category at rated curre	ent	3, DC-23 A	3, DC-23 A	2, DC-23 A	2, DC-23 A

FN 200	FN 250	FN 315	FN 400	FN 630	FN 800	FN 1000	FN 1000H
3+Neutral	3+Neutral						
Isolable	Isolable						
-20 to 50	-20 to 50						
415	415	415	415	415	415	415	415
690	690	690	690	690	690	690	690
8	8	8	8	8	8	8	8
50 - 60	50 - 60	50 - 60	50 - 60	50 - 60	50 - 60	50 - 60	50 - 60
200	250	315	400	630	800	1000	1000
				1		1	
200	250	315	400	630	800	1000	1000
200	250	315	400	630	800	1000	1000
200	250	315	400	630	800	1000	1000
200	250	315	400	630	800	1000	1000
2000	2500	3150	4000	6300	8000	10000	10000
1600	2000	2520	3200	5040	6400	8000	8000
92	115	145	175	270	270	270	
10000	10000	10000	10000	10000	10000	6000	6000
240	400	400	2 x 400	2 x 625	2 x 625	2 x 625	2 x 625
120	120	120	240	400	400	400	400
M 10 x 30	M 10 x 30	M 10 x 30	M 12 x 40	M 16 x 50	M 16 x 50	M 16 x 50	M 16 x 50
6	10	14	14	20	20	25	50
	1			1		1	'
2, DC-23 A	2, DC-23 A	2, DC-22 B					

# **Ordering Information**

Ordering Suffix OOOO for all \* Example: FN 32 Interior with handle \* Ordering Information - **SK955410000** 

Description	FN 32	FN 63	FN 100	FN 125
Interior with handle TPN	SK95541	SK95540	SK95571	SK95405

FN 200	FN 250	FN 315	FN 400	FN 630	FN 800	FN 1000	FN 1000H
SK95607	SK95608	SK95609	SK95610	SK95611	SK95551	SK95710	SK95992

## **Spares & Accessories**

Wide range of spares & accessories are available for Switch-Disconnector-Fuse units type FN.

#### **Accessories**

#### Switched Neutral:



In FN 32 / 63 Switched-Neutral pole is an integral part of the Switch-Disconnector-Fuse. For higher ratings, a double break, site-fitted switched neutral pole can be provided. This is operated by the main mechanism.

#### Terminal Shroud:



The terminals can be shrouded for protection against phase-short circuit through an external conducting path and against accidental human contact with live terminals.

#### Mechanical Interlock Kit:



Two Switch-Disconnector-Fuse units can be interlocked by mechanical interlock kit. After interlocking, the following three positions are possible:

- SDFU 1 in ON position SDFU 2 in OFF position
- SDFU 2 in ON position SDFU 1 in OFF position
- Both SDFUs in OFF position hence two mechanically interlocked SDFUs can be used as a changeover switch

#### Castell Interlock:



Switch-Disconnector-Fuse units can be locked on OFF position with help of castell interlock. Castell interlock can also be used to interlock two SDF units. (Different variety of locks are available)

# SI SI

#### Shaft Extension Kit:

Shaft length can be increased with shaft extension kit.

#### Fuse Puller:



A fuse puller is provided to facilitate easy & safe removal of fuses.

#### Handle Coupling (type A & B):



Irrespective of the switch orientation (vertical or horizontal), operation in any of the four quadrants is possible by selecting right handle coupling (Refer table on next page).

#### **Auxiliary Contacts:**



1 NO + 1 NC auxiliary contact is available as an accessory. This can be suitably wired in the control circuit

- Rated operational current I<sub>e</sub> (AC 15) 4A
- Rated operational voltage U<sub>e</sub> 415 V

#### **Spares**





Moving contacts are available for ranges FN 100 to FN 800. One set of moving contact spare contains, spring, guide & moving contact.

# M

#### Front Housing assembly:

Complete front housing assembly is available from FN 100 to FN 800.

#### Spares & Accessories for FN Range - Ordering Information

	Versions	FN 32 / 63	FN 100	FN 125 / 160	FN 200	FN 250	FN 315	FN 400	FN 630	FN 800	FN 1000 / 1000H
res	Moving Contact	Not Available	SKS	91373	SK91374	SK91375	SK91376	SK91377	SK91378	SK91379	Not Available
Spares	Front Housing Assembly	Not Available	ST31677	ST31678	ST31679	ST31729	ST31681	ST31682	ST31683	ST31730	Not Available
	Terminal Shroud Kit	SK91190	SK	91137	SK9	1335	SK91	346		SK913	347
	Switched Neutral Kit	Built-in	SK	95233	SK9	5516	SK95	517		SK955	546
	Aux. Contact (1 NO + 1 NC)	SK91302	SK	SK91328 SK91329			SK91330				
Accessories	Handle Coupling (Type - A)	SK91257		SK91258			SK91259				
cess	Handle Coupling (Type - B)	SK91277		SK91	278		SK91279				
Ac	Handle Coupling (Type - CE)	SK91337					Not Availab	ole			
	Fuse Puller	SK91185					SF90126	3			
	Shaft Extension Kit	Not Available		SK95600			SK91331				
	Mechanical Interlock Kit	Not Available		SK95232			SK95545				
	Castell Lock (Type A-Type D)	Not Available		SK00333 -	SK00336		SK00345 - SK00348				

7 Ordering Suffix - 0000 for all.

# **Selection of Handle**

#### Seen from front of the door

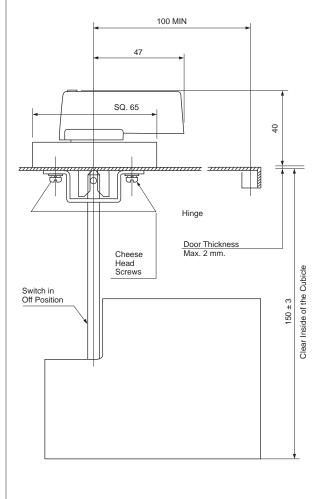
Sr. No.	Handle (off) Position	Operating Quadrant (hand)	Switch Orientation	Door Cut-out	Handle Coupling Type
1			8 OR UUU	°°	A
2			OR OR	$^{\circ}$	В
3	↑		OR UUU	°°	В
4	0		P OR OR	$^{\circ}$ O $_{\circ}$	A
5			OR UUU	°	A
6			B IIII OR OR	$^{\circ}$ O $_{\circ}$	В
7			NOR UUU	°°	В
8		Annu	B OR	°O.	А

Note : Arrow ( — ) indicates position of Interlock Defeat Key Type A : supplied as standard with all S-D-Fs Type B : supplied on request

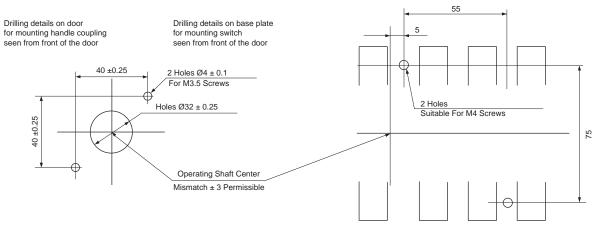
## **Switch-Disconnector-Fuse (suitable for DIN type fuses)**

SDF - FN 32 / 63 6 SQ 150 83.5 128 Auxiliary Contact Block (Optional Accessory) 113.2 29.6 55 5 95 6/ 15.1 31 2 Mounting Holes For M4 Screws Terminal Shroud (Optional Accessory)

#### Assembly of Handle Coupling on Door - FN 32 / 63

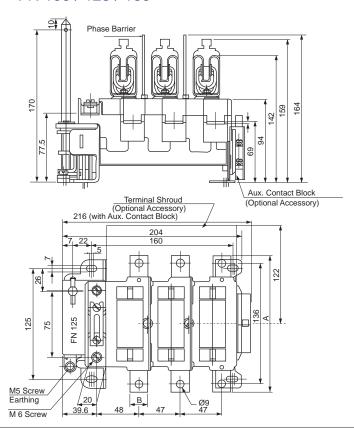


#### Drilling details FN 32 / 63



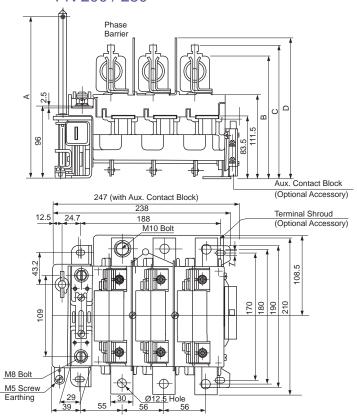
### **Switch-Disconnector-Fuse (suitable for DIN type fuses)**

#### FN 100 / 125 / 160



Туре	Α	В
FN 100 / 125	154	20
FN 160	164	25

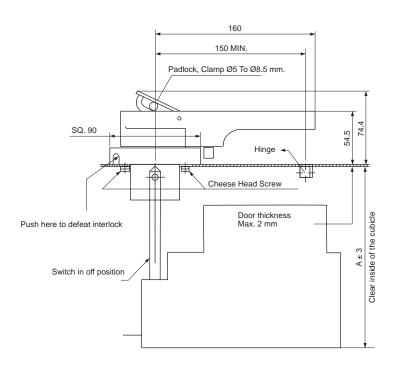
#### FN 200 / 250



Туре	Α	В	С	D
FN 200	190	162.5	178	187.5
FN 250	206	108.5	194.5	204

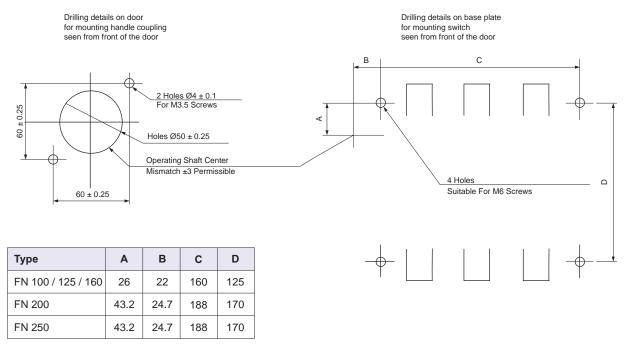
Note: All dimensions are in mm.

### Assembly of Handle Coupling on Door FN 100 / 125 / 160 / 200 / 250



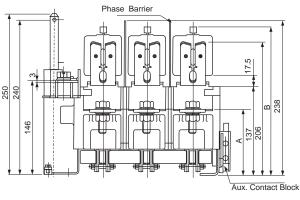
Dimension	FN 100 / 125 / 160	FN 200	FN 250
Α	180	200	216

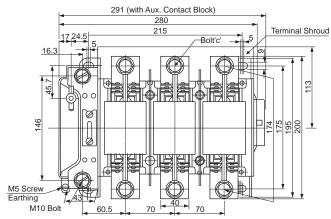
#### Drilling details FN 100 / 125 / 160 / 200 / 250



### **Switch-Disconnector-Fuse (suitable for DIN type fuses)**

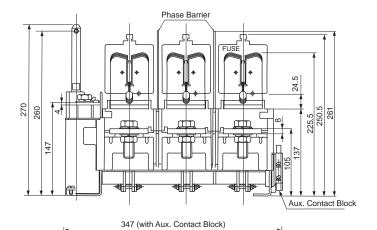
#### FN 315 / 400

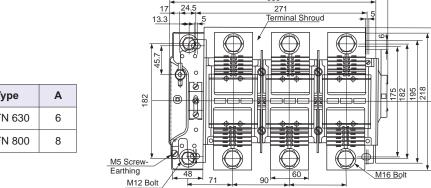




Туре	Α	В	С
FN 315	103	220	M10
FN 400	102	228	M12

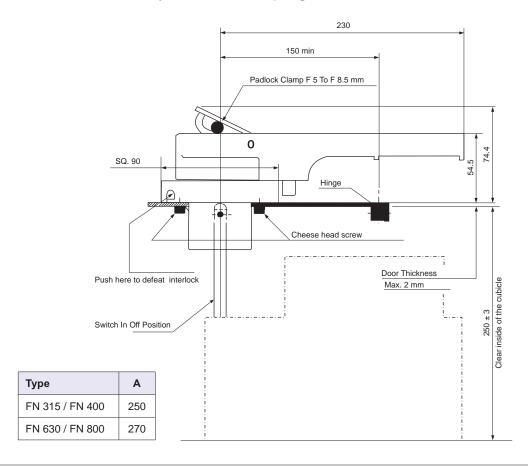
FN 630 / 800



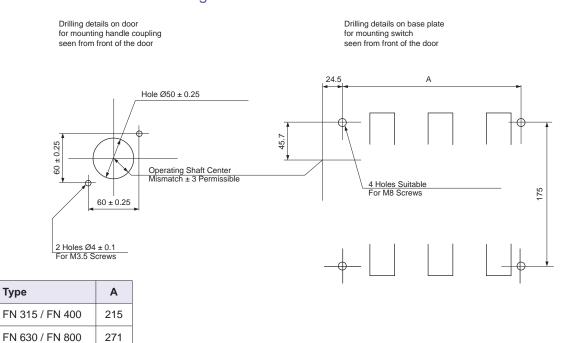




### Assembly of Handle Coupling on Door FN 315 / 400 / 630 / 800

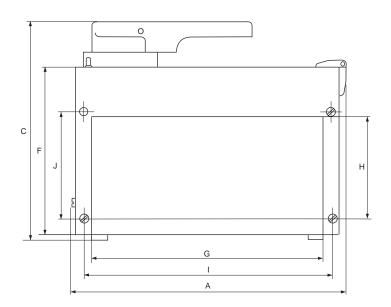


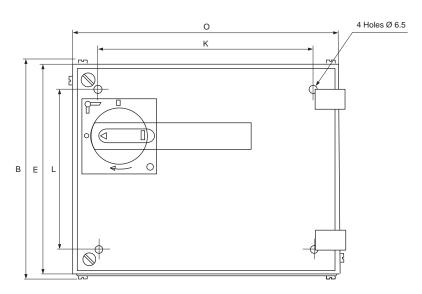
### Drilling details FN 315 / 400 / 630 / 800



Type

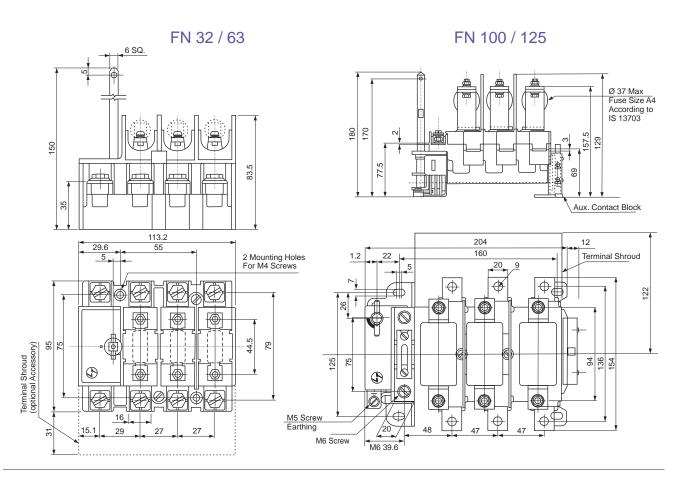
#### **FN in Sheet Steel Enclosure**



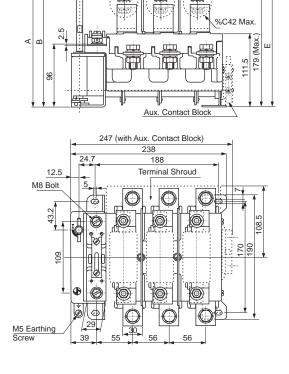


Туре	Extreme overall dimension		Basic enclosure dimension		Cutout for Cables		GI and Plate mounting dimension		Enclosure mounting dimension			
	А	В	С	D	Е	F	G	Н	I	J	K	L
FN 32 / 63	245	238	196	230	226	153	190	73	210	80	170	165
FN 100 / 125 / 160	288	265	245	273	253	183	233	104	253	110	213	193
FN 200	335	265	265	320	253	203	280	124	300	130	260	193
FN 250	335	265	281	320	253	219	280	124	300	130	260	193
FN 315 / 400	365	265	315	350	253	253	310	185	330	191	300	203
FN 630 / 800	421	285	337	406	273	273	366	185	386	191	346	223

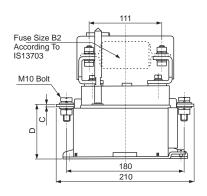
#### **Switch-Disconnector-Fuse (suitable for BS type fuses)**



#### FN 200 / 250



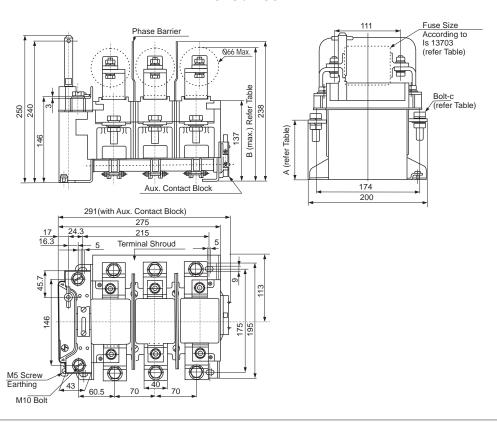
Phase Barrier



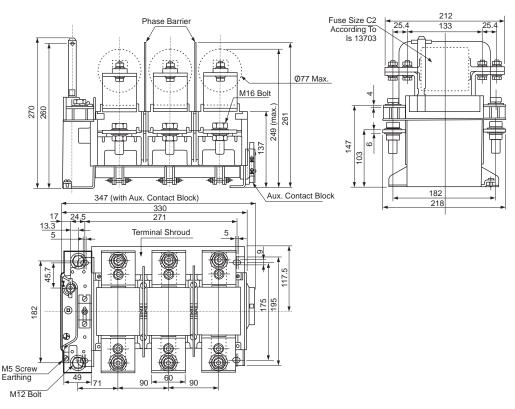
DIM	Α	В	С	D	E	Fuse
FN 200	200	190	4	83.5	187.5	200 A
FN 250	216	206	5	84.5	204	250 A

### **Switch-Disconnector-Fuse (suitable for BS type fuses)**

FN 315 / 400



FN 630



Note: All dimensions are in mm.

# **HRC Fuses - Cylindrical**

#### **Fuse Links Type HF**

#### (Fuse links with cylindrical contact caps)

- Conforms to IEC60269 / IS13703
- Low watt loss Saves power
- Low let through energy
- High breaking capacity 80 kA
- Rated voltage 415 V
- Immediate fault indication through red pop up indicator
- Lower power loss in our fuses result in cooler running of associated products



### **Ordering Details**

Size	Fuse Rating (A)	Cat. Nos.	Rated watt loss	Suitable for SDF type FN
	2	SF90144	0.6	32, 63
	4	SF90145	0.6	32, 63
	6	SF90146	1.1	32, 63
	8	SF90147	1.2	32, 63
	10	SF90148	1.0	32, 63
14 x 51	16	SF90150	2.4	32, 63
	20	SF90151	2.4	32, 63
	25	SF90152	3.2	32, 63
	32	SF90142	5.0	32, 63
	40	SF90143	5.0	63
	50	SF90158	5.0	63
	63	SF90159	7.4	63

Fuse-pulling handle should be used for safe and easy removal of fuse links

Suitable fuse - pulling handle for type HF :  ${\rm SK91185}$ 

# HRC Fuses - Blade / Knife type

### **Fuse Links Type HN**

#### (Fuse links with blade contacts)

- Conforms to IEC60269 / IS13703
- Low watt loss Saves power
- Cooler running of associated products
- Low let through energy
- High breaking capacity 100 kA
- Immediate fault indication
- Rated voltage 415 V



Size of the fuse link	Rating (A)	Cat. Nos.	Rated watt loss	Watt loss limits as per IS 13703	Suitable for SDF units type FN or equivalent
	63	SF94940	5.3		100, 125, 160
0: 000	80	SF94941	6.2	100 1 5 75 11	100, 125, 160
Size 000	100	SF94942	7	100 Amp, Fuse-7.5 W	100, 125, 160
2	125	SF94946	9.5		100, 125, 160
	63	SF94027	5.7		100, 125, 160
	80	SF94028	6.9	100 Amp Fugg 7 F W	100, 125, 160
Size 00	100	SF94029	7.5	100 Amp, Fuse-7.5 W	100, 125, 160
	125	SF94030	9.8		125, 160
	160	SF94939	12		160
	80	SF94128	8.3		200
	100	SF94129	9.1		200
Size 0	125	SF94130	11.3	160 Amp, Fuse-16 W	200
	160	SF94131	12.7		200
	200	SF94132	14.5		200
	125	SF94230	10.3		250, 315
	160	SF94231	12.3		250, 315
Size 1	200	SF94232	14.3	250 Amp, Fuse-23 W	250, 315
	250	SF94233	17.3		250, 315
	315	SF94234	25.5		250, 315
	200	SF94332	14.1		400
Size 2	250	SF94333	16.9	400 Amp, Fuse-34 W	400
0.20 2	315	SF94334	20.2	4007Milp, 1 000 04 VV	400
	400	SF94335	24.9		400
	315	SF94434	20.5		630, 800
	400	SF94435	26.7		630, 800
Size 3	500	SF94436	36.1	630 Amp, Fuse-48 W	630, 800
	630	SF94437	42.2		630, 800
	800	SF94938	48		800

# **HRC Fuses - Bolted**

### Fuse Links Type HG and HQ

#### (Fuse links for bolted connections)

- Conforms to IEC60269 / IS13703
- Low watt loss
- Low let through energy
- High breaking capacity 80kA
- Rated voltage 415V

# Type HQ

Size of the fuse	Rating (A)	Cat. Nos.	Rated Watt Loss	Suitable for SDF units type FN or equivalent
	2	St30736	0.3	32, 63
	4	ST30737	0.5	32, 63
	6	ST30738	1.2	32, 63
0.4	10	ST30739	1.4	32, 63
A1	16	ST30740	1.8	32, 63
	20	ST30741	2.2	32, 63
	25	ST30742	2.9	32, 63
	32	ST30743	3.0	32, 63
	20	ST34527	2.4	-
	25	ST34528	3.1	-
A1L	32	ST34529	3.4	-
	50	ST35827	4.0	-
	63	ST35828	4.7	-
	4	ST30747	0.8	-
	6	ST30748	1.4	-
A2	10	ST30749	1.5	-
AZ	16	ST30750	2.0	-
	20	ST30751	2.8	-
	25	ST30752	3.8	-
	32	ST30753	4.4	-
	35	ST30759	4.5	-
A3	50	ST30760	6.2	-
	63	ST30761	6.8	-
	80	ST30767	9.1	100, 125, 160
Λ.4	100	ST30768	9.5	100, 125, 160
A4	125	ST30769	14	100, 125, 160
	160	ST35829	-	100, 125, 160
	80	ST30774	9.2	-
B1	100	ST30775	10.5	-
	125	ST30776	16.0	-
	125	ST30777	15.0	200, 250, 315, 400
B2	160	ST30778	19.5	200, 250, 315, 400
	200	ST30779	20.5	200, 250, 315, 400
D2	250	ST30781	28	250, 315, 400
B3	315	ST30782	32	315, 400
B4	355	ST30783	34	400
Ь4	400	ST30784	38	400
	400	ST30785	38	630
C2	500	ST30786	50	630
	630	ST30787	55	630
C3	630	ST30788	58	-



**Type HG** 

Size	Rating (A)	Cat. Nos.	Rated Watt Loss
F1	2	ST30725	0.3
F1	4	ST30726	0.5
F1	6	ST30727	1.2
F1	10	ST30728	1.4
F1	16	ST30729	1.8
F1	20	ST30730	2.2
F1	25	ST30731	2.9
F1	32	ST30732	3.0