



Introducing Type VBII 600VDC Enclosed Solar Photovoltaic Disconnect Switches

The first UL Listed line of disconnect switches specifically designed for use with three separate 600VDC circuits.

One VBII disconnect performs the function of three competitive switches.

These switches are designed for use in negative ground 600VDC max. photovoltaic systems which must comply with Article 690 of the NEC.

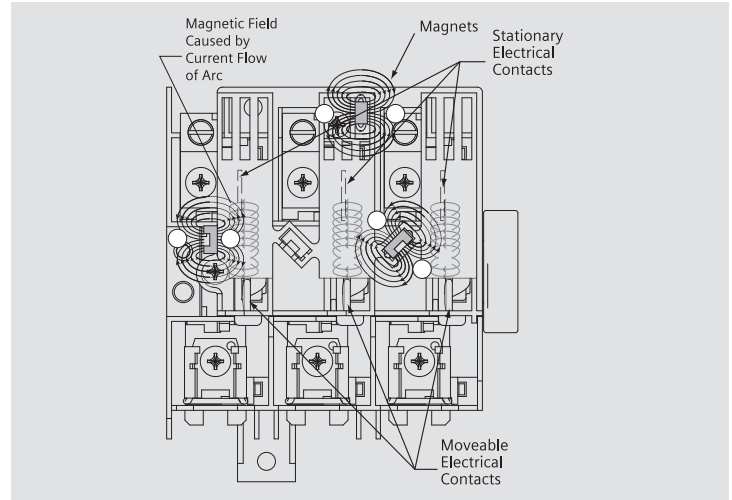
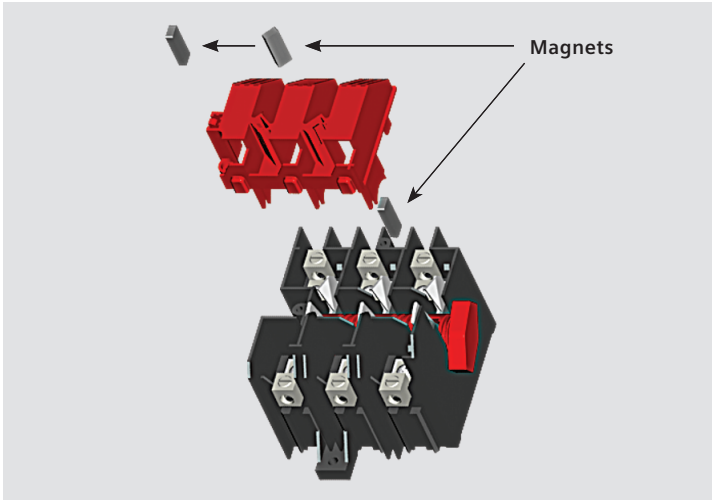
Features

- Available in 30-100A ratings in both fusible and non-fusible versions
- Type 1 and 3R enclosures for either indoor or outdoor applications
- All switches comply with UL98 requirements and are UL listed in file number E335018 as UL1741 Photovoltaic Disconnect Switches
- Tested per UL requirements to control three separate 600VDC circuits in a single 3 pole switch
- Factory installed ground bar supplied as standard
- Door labeling required by Article 690 of the NEC is supplied as standard
- Unique enclosure design features a rolled out front flange that prevents cuts and scrapes to conductor insulation and to the installer's hands
- Metal handle with large plastic grip features a positive stop in both the ON and OFF positions
- Two and 3 point mounting provisions are standard
- Large top, bottom and side gutters facilitate wiring
- Line and load lugs accept larger conductors than required by UL to allow larger cables to be used when required to minimize voltage drop



Heavy Duty Photovoltaic Disconnect Switches

SIEMENS



A true design innovation!

A very hot arc is generated by the interruption of a 600VDC circuit when under load. This damages conventional safety switch contacts and insulating material after a small number of operations unless the poles are connected in series to spread this destructive energy over at least two sets of contacts.

As illustrated above, powerful magnets have been incorporated into the line base assembly of our disconnects which are

strategically located and specifically aligned to disperse this energy and to very quickly extinguish the arc. The result is a line of disconnects that performs at a level far beyond that of any conventional safety switch. These switches have passed the extremely rigorous testing required for photovoltaic disconnects **with three separate 600VDC circuits connected to a single 3 pole switch** as detailed below.

PV test requirements

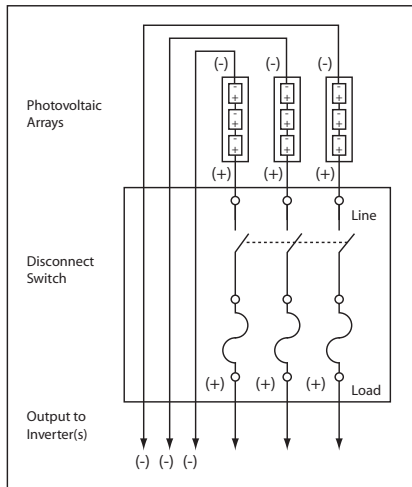
Switch rating	Overload			Loaded endurance			Mechanical endurance
	Amperage	Cycles per minute	No. of cycles	Amperage	Cycles per minute	No. of cycles	No. of cycles
30 amp	60	6	50	30	6	6000	4000
60 amp	120	6	50	60	6	6000	4000
100 amp	200	6	50	100	6	6000	4000

The PV test requirements are the same as those for UL 98 except that the overload testing must be conducted at 200% of the switch rating and this is reduced to 150% for UL 98.

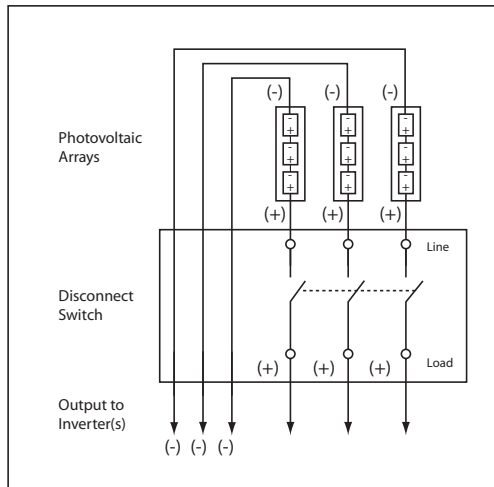
Note: Disconnects are subject to applicable de-rating factors defined by Article 690 of the NEC.

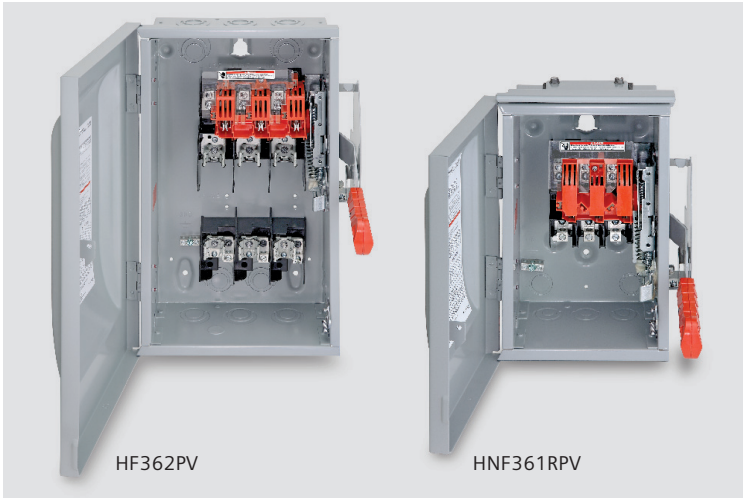
Wiring diagrams

Fusible disconnects



Non-Fusible disconnects





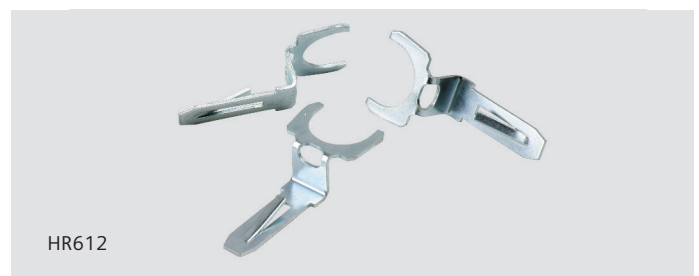
Ordering information (for use on negative ground systems)

Catalog number	Ampere rating	Shipping weight (lbs)	Wire range line and load 60/75 degree C (Cu/Al)	Rated Isc per NEC Article 690
Fusible, Type 1 Indoor, 3 pole, 3 wire, 600V DC				
HF361PV	30	15	#14-6 AWG	19.2 A
HF362PV	60	20	#14-2 AWG	38.4 A
HF363PV	100	24	#6-1/0 AWG	64.0 A
Non-Fusible, Type 1 Indoor, 3 pole, 3 wire, 600V DC				
HNF361PV	30	13	#14-6 AWG	24.0 A
HNF362PV	60	19	#14-2 AWG	48.0 A
HNF363PV	100	23	#6-1/0 AWG	80.0 A
Fusible, Type 3R Outdoor, 3 pole, 3 wire, 600V DC				
HF361RPV	30	15	#14-6 AWG	19.2 A
HF362RPV	60	20	#14-2 AWG	38.4 A
HF363RPV	100	25	#6-1/0 AWG	64.0 A
Non-Fusible, Type 3R Outdoor, 3 pole, 3 wire, 600V DC				
HNF361RPV	30	13	#14-6 AWG	24.0 A
HNF362RPV	60	19	#14-2 AWG	48.0 A
HNF363RPV	100	24	#6-1/0 AWG	80.0 A

Note: All disconnects are rated at 10,000 AIC per UL requirements when used with or protected by Class K, J, or R fuses rated at 600VDC.

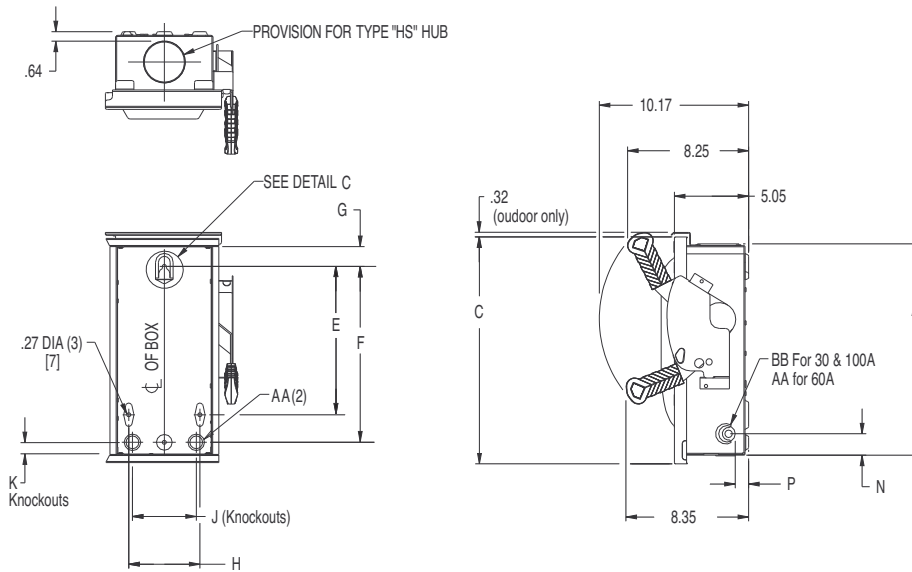
Accessories

Catalog Number	Description
Class R fuse clip kits	
HR612	30A, 600V 3 pole kit
HR62	60A, 600V 3 pole kit
HR63	100A, 600V 3 pole kit
Neutral / negative terminal kits	
HN612	30A neutral kit
HN623	60 and 100A neutral kit
Auxiliary contact kits	
HA161234	1 NO, 1NC (10A at 250V AC max.)
HA261234	2 NO, 2NC (10A at 250V AC max.)
Type 3R hubs	
ECHS075	¾" (conduit size)
ECHS100	1" (conduit size)
ECHS125	1¼" (conduit size)
ECHS150	1½" (conduit size)
ECHS200	2" (conduit size)
ECHS250	2½" (conduit size)
Fuse pullers	
HP61	3 pole 30A kit
HP62	3 pole 60A kit
HP63	3 pole 100A kit

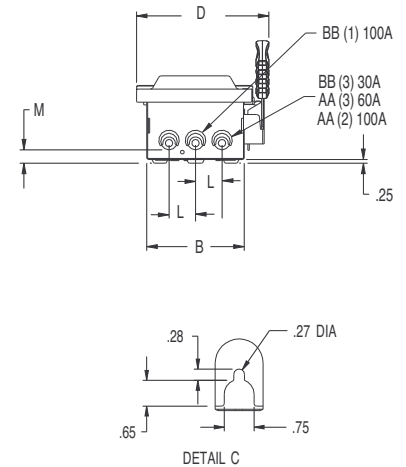


Dimension Drawing

TOP ENDWALL (outdoor only)



BOTTOM ENDWALL
(Also typical for top endwall
for indoor switches)



Catalog number	Dimensions – Inches														
	Enclosure				Mounting					Knockout Locations ¹⁾					
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	
HF361PV	14.26	6.64	15.45	9.01	10.11	12.00	1.35	4.84	4.34	.82	1.80	.91	1.46	.91	
HF362PV	16.26	9.15	17.46	11.53	13.36	12.62	1.19	6.00	2.25	1.25	2.50	.87	1.69	.87	
HF363PV	21.95	9.64	23.15	12.01	19.38	19.38	1.19	7.00	3.50	2.50	2.88	.98	2.45	.85	
HNF361PV	11.11	6.64	12.31	9.01	6.52	7.20	1.35	3.00	4.34	.95	1.80	.91	1.46 ²⁾	.91	
HNF362PV	16.26	9.15	17.46	11.53	13.36	12.62	1.19	6.00	2.25	1.25	2.50	.87	1.69	.87	
HNF363PV	21.95	9.64	23.15	12.01	19.38	19.38	1.19	7.00	3.50	2.50	2.88	.98	2.45	.85	
HF361RPV	14.26	6.64	15.45	9.01	10.11	12.00	1.35	4.84	4.34	.82	1.80	.91	1.46	.91	
HF362RPV	16.26	9.15	17.46	11.53	13.36	12.62	1.19	6.00	2.25	1.25	2.50	.87	1.69	.87	
HF363RPV	21.95	9.64	23.15	12.01	19.38	19.38	1.19	7.00	3.50	2.50	2.88	.98	2.45	.85	
HNF361RPV	11.11	6.64	12.31	9.01	6.52	7.20	1.35	3.00	4.34	.95	1.80	.91	1.46 ²⁾	.91	
HNF362RPV	16.26	9.15	17.46	11.53	13.36	12.62	1.19	6.00	2.25	1.25	2.50	.87	1.69	.87	
HNF363RPV	21.95	9.64	23.15	12.01	19.38	19.38	1.19	7.00	3.50	2.50	2.88	.98	2.45	.85	

- 1) Additional knockouts supplied near the top in back and side surfaces of indoor enclosures are not shown.
2) Knockout supplied on left side only.

Notes:

- Indoor enclosures are constructed of .054 inch thick cold rolled steel
- Outdoor enclosures are constructed from .054 inch thick galvanized steel
- Finish is ANSI #61 gray

Knockout sizes (inches) and wiring bending/side gutter space

Catalog number	Ampere rating	Knockout code	Conduit size (inches)	Wire bending & side gutter space (inches)		
				Top	Bottom	Left side gutter width
HF361PV, HF361RPV	30	AA (concentric)	.75, 1.00	3.02	2.61	1.5
HNF361PV, HNF361RPV		BB (tangential)	.50, .75, 1.00	3.02	4.11	
HF362PV, HF362RPV	60	AA (tangential)	.50, .75, 1.00, 1.25	3.54	3.57	2.25
HNF362PV, HNF362RPV				3.54	8.68	
HF363PV, HF363RPV	100	AA (tangential)	.75, 1.00, 1.25, 1.50	6.07	6.10	2.75
HNF363PV, HNF363RPV		BB (tangential)	1.00, 1.25, 1.50, 2.00	6.07	11.46	

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