



December 1990
Supersedes Technical Data 29-420,
pages 3-4 dated September 1983
Mailed to: E, D, C/29-400A

Page 3: Type DS 30, 60, 100, 200, 400, 600
Amperes, Fusible and Non-Fusible
Page 4: Visi-Flex De-ion® Switches

Disconnect Switches

Type DS Disconnect Switches, Fusible and Non-Fusible, Continued

Maximum Horsepower Ratings

Type Switch	Maximum Horsepower Ratings								Discount Symbol CB-15					
	120 Volts Ac		240 Volts Ac		480 Volts Ac		600 Volts Ac		250 Volts Dc	Switch Rating		Kit		
	Standard	Time Delay	Standard	Time Delay	Standard	Time Delay	Standard	Time Delay		Amps	Volts			
DS16U	5	...	10	....	20	.....	25	.....	7½	30	250	RFK121	2609D97G01	
DS121R	1½	3	3	7½	.....	.....	.....	.....	5	30	600	RFK161	2609D97G02	
DS122	3	...	7½	.....	.....	.....	.....	.....	5	60	250	RFK222	2609D97G03	
DS161R	.....	.....	.....	.....	5	15	7½	20	5	60	600	RFK262	2609D97G04	
DS162	.....	.....	.....	.....	15	.....	15	.....	5	100	250/600	RFK464	750B249G01	
DS26U	10	...	20	....	40	.....	60	.....	15	200	250/600	RFK464	750B249G01	
DS222R	3	7½	7½	15	.....	.....	.....	.....	10	400	250/600	RFK666	750B427G01	
DS262R	.....	.....	.....	.....	15	30	15	50	10	600	250/600	RFK666	750B427G01	
DS263	.....	...	15	.....	25	.....	30	.....	10					
DS36U	15	...	30	....	75	.....	75	.....	25					
DS363R	.....	.....	15	30	25	60	30	75	20					
DS364	.....	...	25	.....	50	.....	60	.....	20					
DS46U	.....	...	60	.....	125	.....	150	.....	40					
DS464R	.....	...	25	60	50	125	60	150	40					
DS465	.....	...	50	60	100	.....	100	.....	40					
DS56U	.....	...	100	.....	250	.....	350	.....	...					
DS565R	.....	...	50	100	100	250	125	350	...					
DS66U	.....	...	100	.....	400	.....	500	.....	...					
DS666R	.....	...	75	100	150	400	200	500	...					

Class R Fuse Clip Conversion Kits for
Type DS Switches
List Prices: Price List 29-020
Discount Symbol CB-15

Terminal Data

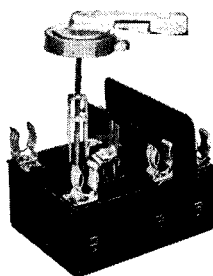
Terminals are suitable for either copper or
aluminum cable.

Switch Rating	Wire Range	
	Copper	Aluminum
30	#14-#2	#12-#2
60	#14-#2	#12-#2
100	#14-0	#12-0
200	#4-300 MCM	#4-300 MCM
400	(1)#4-600 MCM or (2)1/0-3/0	(1)#4-600 MCM or (2)1/0-250 MCM
600	Same as 400A except two terminals per pole	

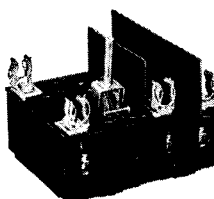


Visi-Flex De-ion® Switches

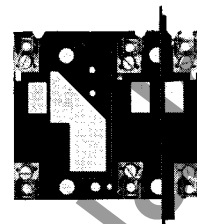
Complete Model A switch styles with fuse or non-fuse kits mounted are listed with Underwriters' Laboratories, Inc. Refer to "Electrical Construction Materials List," Miscellaneous Switches. Switches only, no fuse, fuse clip kit and all Model T switches are UL recognized components. The external operating handle of Model A can be padlocked in the Off position with up to 3 padlocks.



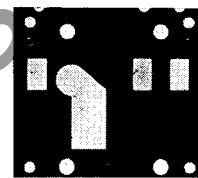
Model A



Model T



Fuse Clip Kit



No Fuse Kit

Switch Selection Data

Continuous Ampere Rating	Fuse or No-fuse Kit (See photos Above)	Model A, Adjustable Depth		Model T, Toggle Operated		Fuse Clip Kits for Model A or T ^③ Style Number (No Fuse Kit - See Below)	
		Complete Unit Style Number ^④ (Includes Std. Class K or H Fuse Clips)	Switch Only ^⑤ Style Number (See handle and shaft below, fuse kit at right)	Switch Only ^⑤ Style Number (See Fuse kit at right)		Clips for Class K or H Fuses ^⑥	Clips for Class R Fuses Only ^⑦
30	No Fuse ^⑧ 30 Amp 250 Volt 60 Amp 250 Volt 100 Amp 250 Volt 30 Amp 600 Volt 60 Amp 600 Volt	2607D89G01	2607D63G02	371D392G02		313C590G08	1226C94G01
		2607D89G02	2607D63G01	371D392G01		313C590G09	1226C94G03
		2607D89G03	2607D63G01	371D392G01		313C590G10	1226C94G05
		2607D89G04	2607D63G01	371D392G01		313C590G13	1226C94G02
		2607D89G05	2607D63G01	371D392G01		313C590G11	1226C94G04
		2607D89G06	2607D63G01	371D392G01			
Special 60 ②	No Fuse ^⑧ 30 Amp 250 Volt 60 Amp 250 Volt 100 Amp 250 Volt 30 Amp 600 Volt 60 Amp 600 Volt	2607D89G07	2607D63G06	371D392G06		313C590G08	1226C94G01
		2607D89G08	2607D63G05	371D392G05		313C590G09	1226C94G03
		2607D89G09	2607D63G05	371D392G05		313C590G13	1226C94G05
		2607D89G10	2607D63G05	371D392G05		313C590G10	1226C94G02
		2607D89G11	2607D63G05	371D392G05		313C590G11	1226C94G04
		2607D89G12	2607D63G05	371D392G05			
60 ●	No Fuse ^⑧ 30 Amp 250 Volt 60 Amp 250 Volt 100 Amp 250 Volt 200 Amp 250 Volt 30 Amp 600 Volt 60 Amp 600 Volt 100 Amp 600 Volt	2607D90G01	2607D66G14	657D780G12		177C880G23	1226C94G06
		2607D90G02	2607D66G13	657D780G11		177C880G12	1226C94G08
		2607D90G03	2607D66G13	657D780G11		177C880G13	1226C94G10
		2607D90G04	2607D66G13	657D780G11		177C880G14	
		2607D90G05	2607D66G13	657D780G11		177C880G24	1226C94G07
		2607D90G06	2607D66G13	657D780G11		177C880G15	1226C94G09
		2607D90G07	2607D66G13	657D780G11		177C880G16	1226C94G11
		2607D90G08	2607D66G13	657D780G11			
		2607D91G07	2607D66G18	657D780G16		177C880G12	1226C94G08
		2607D91G08	2607D66G17	657D780G15		177C880G13	1226C94G10
100	No Fuse ^⑧ 60 Amp 250 Volt 100 Amp 250 Volt 200 Amp 250 Volt 60 Amp 600 Volt 100 Amp 600 Volt 200 Amp 600 Volt	2607D91G09	2607D66G17	657D780G15		177C880G14	1226C94G09
		2607D91G10	2607D66G17	657D780G15		177C880G15	1226C94G11
		2607D91G11	2607D66G17	657D780G15		177C880G16	
		2607D91G12	2607D66G17	657D780G15			
		2607D91G13	2607D66G17	657D780G15			

List Prices: Price List 29-020

Discount Symbol: CB-13 except
where noted

Terminal Data

30, Spec. 60 Ampere Switches: #14-#4 Cu
Cable Only.

60, 100 Ampere Switches: #14-1/0 Cu Cable
Only.

Dimension Reference

Switch Rating	DS 29-470 Page	Model A	Model T
30 Spec. 60	Page 9		Page 7
60, 100	Page 10		Page 8

No Fuse Kits (For Models A or T)^⑦

30, Special 60 Amp Switches
Style 313C590G14 Disc. CB-13

60, 100 Amp Switches
Style 313C363G11 Disc. CB-13

Model A External Operating Handle
Style 504C323G03 Disc. CB-14

Model A Standard Shaft
30, Special 60 Amp Switches
Style 2607D64G01 Disc. CB-13

60, 100 Amp Switches
Style 2607D65G01 Disc. CB-13

④ Changed or added since previous issue.

⑤ Special 60 ampere switch has same dimension as 30
amp Visi-Flex switch. Standard 60 amp switch has same
dimensions as 100 amp Visi-Flex Switch.

⑥ Includes fuse clips and Micarta barriers, and when
applicable, Class R rejection feature.

④ Switches with these fuse clips suitable for use on
circuits capable of delivering not more than 10,000
amps, RMS symmetrical, up to 600 volts Ac.

⑤ For use with panels 5 1/16" - 8 3/16" deep.

⑥ For use with panels 5 1/8" - 9 3/32" deep.

⑦ Rated 600 volts. Non-fusible switches suitable for
circuits with 10,000 amps RMS maximum, when
protected by standard fuses or circuit breaker with the
same continuous rating as the switch. When protected
by Class J or R fuses with ratings not exceeding the
switch rating, they are suitable for circuits with 100,000
amps, RMS symmetrical maximum.

⑧ External operating handle, shaft and fuse or no-fuse kit
required.

⑨ Fuse or no-fuse kit required.

⑩ Shipped as basic switch, operating handle, shaft and
fuse or no-fuse kit.

⑪ Switches with these fuse clips and Class R fuses
suitable for use on circuits capable of delivering not
more than 100,000 amps, RMS symmetrical, up to 600
volts Ac.



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pages 5-6, dated September, 1983
Mailed to: E, D, C/29-400A

Model A and T Visi-Flex
De-ion® Switches

Disconnect Switches

Visi-Flex De-ion® Switches, Continued

Accessories

List Prices: Price List 29-020
Disc. Symbol: CB-13

Auxiliary Switch Kits For Model A and T Switches

Permits field mounting of an auxiliary switch for separate control circuit applications. Provides a SPDT switch with 1A and/or 1B contacts. Includes three 18" soldered leads identified.

Complete Kit Style No.	For Use With
315C293G01 ②	30 and Spec. 60 Amp Switch 60 and 100 Amp Switch

Extra Long Vari-Depth Shaft For Model A Switches

Order in place of standard shaft when required.

Switch Ampere Rating	Panel Depth Long Shaft	Style Number
30	8 ³ / ₁₆ -13 ¹ / ₁₆ ③	2607D65G02
Spec. 60	8 ³ / ₁₆ -13 ¹ / ₁₆ ③	2607D65G02
60	9 ³ / ₃₂ -14 ¹ / ₁₆	2607D65G02
100	9 ³ / ₃₂ -14 ¹ / ₁₆	2607D65G02

Maximum Horsepower Ratings

Fuse Clip Ratings	Maximum Horsepower Ratings										250 Volts Dc
	120 Volts Ac		240 Volts Ac		480 Volts Ac		600 Volts Ac				
	Standard	Time Delay	Standard	Time Delay	Standard	Time Delay	Standard	Time Delay			
30 Ampere Switch											
Unfused	3	...	7½	...	20	...	25	...	5	5	
30a./250v.	1½	3	3	7½	...	...	...	...	5	5	
60a./250v.	3	...	5	...	...	...	...	...	5	5	
100a./250v.	3	...	5	...	...	...	...	...	5	5	
30a./600v.	...	...	...	...	5	15	7½	20	5	5	
60a./600v.	...	...	...	...	15	...	20	...	5	5	
60 Ampere Switch (and Special 60 Ampere Switch)											
Unfused	7½	...	20	...	40	...	50	...	10	10	
30a./250v.	1½	3	3	7½	...	...	...	...	5	5	
60a./250v.	3	7½	7½	15	...	...	...	...	10	10	
100a./250v.	...	...	15	...	...	...	...	...	10	10	
200a./250v. ④	...	...	15	...	...	...	...	...	...	...	
30a./600v.	...	...	...	...	5	15	7½	20	5	5	
60a./600v.	...	...	...	...	15	30	15	50	10	10	
100a./600v. ④	...	...	15	...	25	30	30	50 ⑤	10	10	
100 Ampere Switch											
Unfused	15	...	30	...	60	...	75	...	20	20	
30a./250v.	1½	3	3	7½	...	...	...	...	5	5	
60a./250v.	3	7½	7½	15	...	...	...	...	10	10	
100a./250v.	15	15	15	30	...	...	...	...	20	20	
200a./250v.	15	15	15	30	...	...	...	...	20	20	
30a./600v.	...	...	...	...	5	15	7½	20	...	...	
60a./600v.	...	...	...	...	15	30	15	50	...	...	
100a./600v.	...	...	...	...	25	60	30	75	...	...	
200a./600v.	...	...	...	...	25	60	30	75	...	...	

Special Visi-Flex Switches Visi-Flex Switches With Auxiliary Switch Internally Mounted

Basic switch only. Also order no fuse kit, fuse kit, operating handle and shaft as required.

Ampere Rating	For Use Without Fuses	For Use With Fuses
Model A		
30	2607D63G04	2607D63G03
Spec. 60	2607D63G08	2607D63G07
60	2607D66G16	2607D66G15
100	2607D66G20	2607D66G19
Model T		
30	371D392G04	371D392G03
Spec. 60	371D392G08	371D392G07
60	657D780G14	657D780G13
100	657D780G18 ⑦	657D780G17 ⑧

Special Fuse Kits

For Model A and/or T switches. Order in place of standard fuse clips.

Current Limiting, Class J ⑤

Switch Type Rating	Fuse Kit	
	Rating	Style Number
Model A 30 Spec. 60	30a./600v.	503C690G01
	60a./600v.	503C690G02
	100a./600v.	503C690G03
Model A 60 100	30a./600v.	503C690G15
	60a./600v.	503C690G16
	100a./600v.	503C690G17
Model T 30 Spec. 60	30a./600v.	503C690G04
	60a./600v.	503C690G05
	100a./600v.	503C690G06
Model T 60 100	30a./600v.	503C690G19
	60a./600v.	503C690G20
	100a./600v.	503C690G21
	200a./600v.	503C690G22

⑦ Changed since previous issue.

⑧ Order instruction sheet 12641.

③ For panel depth of 8³/₁₆" to 9¹/₁₆" a minimum of 1³/₄" must be cut from bottom of shaft.

④ Does not apply to special 60 ampere switch since these fuse clips cannot be added.

⑤ Switches with these fuse clips and Class J fuses, suitable for circuits with available faults up to 100,000 amps, 600 volts.



Guide to Replacement of Visi-Flex Switches^①

Model A, Basic Switch

Switch Type	Style Numbers in Order of Supersedure					Current Style
	Original Style	Intermediate Styles				
30 Ampere Switches						
Fusible	451D718G03	459D781G03	657D777G03	371D290G01	2607D63G01	
No Fuse	.....	459D781G04	657D777G04	371D290G02	2607D63G02	
Special 60 Ampere Switches						
Fusible	451D718G07	459D781G07	657D777G07	371D290G05	2607D63G05	
No Fuse	.....	459D781G08	657D777G08	371D290G06	2607D63G06	
60 Ampere Switches						
Fusible	451D251G03	459D782G03	657D782G03	657D782G13	2607D66G13	
No Fuse	.....	459D782G04	657D782G04	657D782G14	2607D66G14	
100 Ampere Switches						
Fusible	451D251G07	459D782G07	657D782G07	657D782G17	2607D66G17	
No Fuse	.....	459D782G08	657D782G08	657D782G18	2607D66G18	

Model T, Basic Switch

Switch Type	Style Numbers in Order of Supersedure			Current Style
	Original Style	Intermediate Style		
30 Ampere Switches				
Fusible	451D717G01	657D776G01		371D392G01
No Fuse	.....	657D776G02		371D392G02
Special 60 Ampere Switches				
Fusible	451D717G05	657D776G05		371D392G05
No Fuse	.....	657D776G06		371D392G06
60 Ampere Switches				
Fusible	451D252G01	657D780G01		657D780G11
No Fuse	.....	657D780G02		657D780G12
100 Ampere Switches				
Fusible	451D252G05	657D780G05		657D780G15
No Fuse	.....	657D780G06		657D780G16

Model A, Complete Switch

Fuse or No Fuse Kit (See Page 3)	Style Numbers of Superseded Switches			Current Style
	Original Style	Intermediate Styles		
30 Ampere Switches				
No Fuse	451D716G14	657D775G14	371D289G01	2607D89G01
30 Amp 250 Volt	451D716G15	657D775G15	371D289G02	2607D89G02
60 Amp 250 Volt	451D716G16	657D775G16	371D289G03	2607D89G03
100 Amp 250 Volt	451D716G17	657D775G17	371D289G04	2607D89G04
30 Amp 600 Volt	451D716G18	657D775G18	371D289G05	2607D89G05
60 Amp 600 Volt	451D716G19	657D775G19	371D289G06	2607D89G06
Special 60 Ampere Switches				
No Fuse	451D716G20	657D775G20	371D289G07	2607D89G07
30 Amp 250 Volt	451D716G21	657D775G21	371D289G08	2607D89G08
60 Amp 250 Volt	451D716G22	657D775G22	371D289G09	2607D89G09
100 Amp 250 Volt	451D716G23	657D775G23	371D289G10	2607D89G10
30 Amp 600 Volt	451D716G24	657D775G24	371D289G11	2607D89G11
60 Amp 600 Volt	451D716G25	657D775G25	371D289G12	2607D89G12
60 Ampere Switches				
No Fuse	451D246G19	657D781G19	374D363G01	2607D90G01
30 Amp 250 Volt	451D246G20	657D781G20	374D363G02	2607D90G02
60 Amp 250 Volt	451D246G21	657D781G21	374D363G03	2607D90G03
100 Amp 250 Volt	451D246G22	657D781G22	374D363G04	2607D90G04
200 Amp 250 Volt	451D246G23	657D781G23	374D363G05	2607D90G05
30 Amp 600 Volt	451D246G24	657D781G24	374D363G06	2607D90G06
60 Amp 600 Volt	451D246G25	657D781G25	374D363G07	2607D90G07
100 Amp 600 Volt	451D246G26	657D781G26	374D363G08	2607D90G08
100 Ampere Switches				
No Fuse	451D246G27	657D781G27	657D781G07	2607D91G07
60 Amp 250 Volt	451D246G28	657D781G28	657D781G08	2607D91G08
100 Amp 250 Volt	451D246G29	657D781G29	657D781G09	2607D91G09
200 Amp 250 Volt	451D246G30	657D781G30	657D781G10	2607D91G10
60 Amp 600 Volt	451D246G31	657D781G31	657D781G11	2607D91G11
100 Amp 600 Volt	451D246G32	657D781G32	657D781G12	2607D91G12
200 Amp 600 Volt	451D246G33	657D781G33	657D781G13	2607D91G13

Model T, Complete Switches^②

Fuse or No Fuse Kit (See Page 3)	Style Numbers in Order of Supersedure			Last Mfd. Style
	Original Style	Intermediate Style		
30 Ampere Switches				
No Fuse	451D715G14	657D774G14	371D391G01	
30 Amp 250 Volt	451D715G15	657D774G15	371D391G02	
60 Amp 250 Volt	451D715G16	657D774G16	371D391G03	
30 Amp 600 Volt	451D715G17	657D774G17	371D391G04	
60 Amp 600 Volt	451D715G18	657D774G18	371D391G05	
100 Amp 250 Volt	451D715G22	657D774G22	371D391G09	
Special 60 Ampere Switches				
No Fuse	451D715G19	657D774G19	371D391G06	
60 Amp 250 Volt	451D715G20	657D774G20	371D391G07	
60 Amp 600 Volt	451D715G21	657D774G21	371D391G08	
30 Amp 250 Volt	451D715G23	657D774G23	371D391G10	
30 Amp 600 Volt	451D715G24	657D774G24	371D391G11	
100 Amp 250 Volt	451D715G25	657D774G25	371D391G12	
60 Ampere Switches				
No Fuse	451D245G20	657D779G20	374D362G01	
60 Amp 250 Volt	451D245G21	657D779G21	374D362G03	
100 Amp 250 Volt	451D245G22	657D779G22	374D362G04	
200 Amp 250 Volt	451D245G23	657D779G23	374D362G05	
60 Amp 600 Volt	451D245G24	657D779G24	374D362G07	
100 Amp 600 Volt	451D245G25	657D779G25	374D362G08	
30 Amp 250 Volt	451D245G32	657D779G32	374D362G02	
30 Amp 600 Volt	451D245G33	657D779G33	374D362G06	
100 Ampere Switches				
No Fuse	451D245G26	657D779G26	657D779G07	
100 Amp 250 Volt	451D245G27	657D779G27	657D779G08	
200 Amp 250 Volt	451D245G28	657D779G28	657D779G09	
100 Amp 600 Volt	451D245G30	657D779G30	657D779G10	
200 Amp 600 Volt	451D245G31	657D779G31	657D779G11	

^① The style listed as current is physically interchangeable with all previous styles listed. Model A switches must be ordered complete with operating shaft as listed on page 4.
^② Style numbers for reference only. Complete Model T switches no longer supplied. Use basic switch components for replacements.

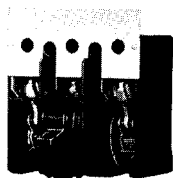


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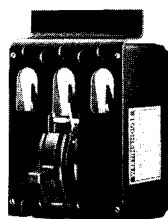
30, 60, 100 Ampere De-ion® Switches
Type DS 30, 60, 100, 200 Amperes

Disconnect Switches

De-ion® Switch 30, 60, 100 Amperes



30 and 60 Ampere



100 Ampere

De-ion switches are listed by the Underwriters' Laboratories through 50 hp, 600 volts Ac.

Ratings^④

Volts Ac	Maximum Hp, 3 Phase		
	Switch		
	30 Amp	60 Amp	100 Amp ^④
125	5	7½	20
240	10	20	40
480	20	40	75
600	25	50	100
(250v Dc)	5	10	20

To select 400 and 800 ampere switches for motor applications, multiply motor full load current by 115% and select the switch with the equivalent or higher ampere rating.

Dimensions

Switch	Dimension Reference
30	D. S. 29-470, Page 3
60	D. S. 29-470, Page 3
100	D. S. 29-470, Page 3
400	D. S. 29-170, Page 16.1
800	D. S. 29-170, Page 18

Base Mounting Hardware

No additional charge for mounting hardware. Specify when required.

For General Use and With Sliding Plate Mechanisms

Style 1720 936 for 30 and 60 ampere models.

Style 1720 937 for 100 ampere model.

Style 21C6782G22 for 400 ampere models.

Style 1091 716 for 800 ampere model.

For Use with Vari-Depth Mechanisms

Style 21C6782G12 for 30 and 60 ampere models.

Style 21C6782G13 for 100 ampere model.
(400 and 800 Ampere Hardware Included with Vari-Depth Mechanism.)

Selection Data List Prices: Price List 29-020 PWE A Discount Symbol: CB-13

Ampere Rating	Copper Only ^⑤ Cable Size	Style Number	Approx. Ship Wt./Lbs.
Standard Models^⑥			
30	# 14-6	371D266G02	3
60	# 14-4	371D266G01	3
100	# 14-1/0	657D772G02	5
200 ^⑦	(2)3/0-250 MCM	179C803G33 ^③	24½
400	3/0 to 300 MCM		
800	(Triple Cable)	315C046G35 ^③	44
Long Handle Models^②			
30	# 14-6	371D266G04	3½
60	# 14-4	371D266G03	3½
100	# 14-1/0	657D772G07	5½

Models With Auxiliary Switches: Similar to standard models, except with one external (RH side) SPDT auxiliary switch having 1-A and 1-B contacts. One inch additional mounting space required on right side of De-ion Switch for auxiliary switch.

Ampere Rating	Copper Only Cable Size	Style Number	Approx. Ship Wt./Lbs.
Standard Models With Auxiliary Switches			
30	# 14-6	504C123G01	3½
60	# 14-4	504C123G02	3½
100	# 14-1/0	504C123G03	5½
200 ^⑦			..
Long Handle Models With Auxiliary Switches^②			
30	# 14-6	504C123G06	3½
60	# 14-4	504C123G05	3½
100	# 14-1/0	504C123G07	5½

Accessories

Type MD Fuse Blocks

Following styles include two complete fuse blocks, plus mounting hardware. All blocks are three pole and are supplied with terminals listed for either AL or CU cable.

Catalog Number	Description	Wire Range
FBK321	30 A-250 V	# 14-# 2 Cu/Al
FBK361	30 A-600 V	# 14-# 2 Cu/Al
FBK322	60 A-250 V	# 14-# 2 Cu/Al
FBK362	60 A-600 V	# 14-# 2 Cu/Al
FBK363	100 A-250 and 600 V	# 14-1/0 Cu/Al
FBK364	200 A-250 and 600 V	# 6-250 MCM Cu/Al

Fuse Clip Conversion Kits

Fit above fuse blocks; used to increase or decrease fuse rating. Includes 6 fuse clips and required spacers.

Catalog Number	Description	For Use With
FC12	30 A-250 V	30 or 60 A Fuse Block
FC16	30 A-600 V	
FC22	60 A-250 V	
FC26	60 A-600 V	
FC36	100 A-250 and 600 V	100 A Fuse Block
FC46	200 A-250 and 600 V	

^② Longer handles render these switches unsuitable for use with Vari-depth handle mechanisms.

^③ The styles supplied are non-automatic Saf-T-Vue breakers. Customer can use or remove special transparent plate, as desired (400 amp is Type LB, and 800 amp is Type MA.)

^④ Switch nameplate shows no ratings above 50 hp. to conform to maximum U/L listings. However, switch design permits these maximum hp. ratings to be applied.

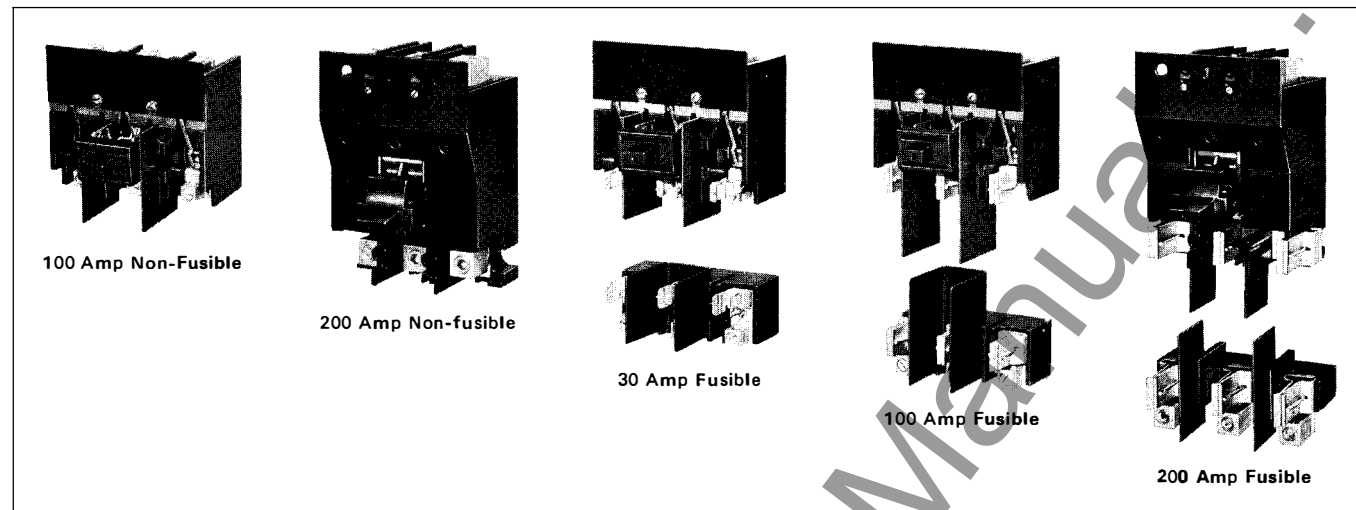
^⑤ Aluminum-Copper terminals are available for 400 and 800 ampere switches. Specify if needed.

^⑥ Listed with Underwriter's Laboratories, Inc. Refer to "Electrical Construction Materials List," Miscellaneous Switches.

^⑦ See page 2 of this price list for a new, compact modern 200 ampere switch.



Type DS Disconnect Switches, Fusible and Non-Fusible



Description

Type DS disconnect is a compact load break switch using the De-ion arc quenching principle and quick make-quick break over center toggle mechanism. It has visible contacts, is Underwriters' Laboratories, Inc. listed up to 100 hp., and is available either as a fusible or non-fusible switch.®

Withstandability Ratings

Switch Rating	Withstandability I²T (Amperes² Seconds)
30	.37 x 10⁶
60	.72 x 10⁶
100	1.52 x 10⁶
200	5.3 x 10⁶

Terminal Data

Terminals are suitable for either copper or aluminum cable.

Switch Rating	Wire Range	
	Copper	Aluminum
30	#14-#2	#12-#2
60	#14-#2	#12-#2
100	#14-0	#12-0
200	#4-300 MCM	#4-300 MCM

Base Mounting Hardware

Order separately when required.

No charge when ordered with switch.

30, 60, 100 Amp Non-fusible:

Style No. 624B375G17

30, 60, 100 Amp Fusible:

Style No. 624B375G17

200 Amp Non-fusible:

Style No. 624B375G07

200 Amp Fusible: Style No. 624B375G08

Selection Data

Switch Rating	Fuse Clip Rating			Cat. No. Complete
	Amps	Type	Volts	
30	No Fuse®	...	...	DS16U
30	30	NEC	250	DS121
30	30	NEC	600	DS161
30	60	NEC	250	DS122
30	60	NEC	600	DS162
60	No Fuse®	...	...	DS26U
60	60	NEC	250	DS222
60	60	NEC	600	DS262
60	100	NEC	250/600	DS263
100	No Fuse®	...	...	DS36U
100	100	NEC	250/600	DS363
100③	200	NEC	250/600	DS364
200	No Fuse®	...	...	DS46U
200	200	NEC	250/600	DS464
200②③	400	NEC	250/600	DS465

Maximum Horsepower Ratings

Type Switch	Maximum Horsepower Ratings									
	120 Volts Ac		240 Volts Ac		480 Volts Ac		600 Volts Ac		250 Volts Dc	
	Standard	Time Delay	Standard	Time Delay	Standard	Time Delay	Standard	Time Delay	Standard	Time Delay
DS16U	5	...	10	...	20	...	25	...	7½	...
DS121	1½	3	3	7½	...	...	...	...	5	...
DS122	3	...	7½	...	...	...	7½	20	5	...
DS161	...	...	...	...	5	15	...	...	5	...
DS162	...	...	...	...	15	...	15	...	5	...
DS26U	10	...	20	...	40	...	60	...	15	...
DS222	3	7½	7½	15	...	...	...	...	10	...
DS262	...	...	...	...	15	30	15	50	10	...
DS263	...	...	15	...	25	...	30	...	10	...
DS36U	15	...	30	...	75	...	75	...	25	...
DS363	...	...	15	30	25	60	30	75	20	...
DS364	...	...	25	...	50	...	60	...	20	...
DS46U	...	...	60	...	100	...	100	...	40	...
DS464	...	...	25	60	50	100	60	100	40	...
DS465	...	...	50	60	100	...	100	...	40	...

Auxiliary Switch Kits

Permits field mounting of an auxiliary switch for separate control circuit applications. Each switch includes three soldered, identified leads. Rated 250 volts max.

Switch Used With	Contact Arrangement	Kit Style Number
30 60 100 Amp.	1A, 1B	178C265G03
30 60 100 Amp.	2A's, 2B's	178C265G04
200 Amp	1A, 1B	178C619G01
200 Amp	2A's, 2B's	178C619G02

List Prices: See Price List 29-020 P WE A
Discount Symbol: CB-13

Further Information

Dimensions and Drillings: DS 29-470

Handle Mechanisms: 29-520 T WE A

② Not listed with Underwriter's Laboratories, Inc.

③ Supplied as unfused switch with separate fuse blocks.

④ 600 volt ratings are suitable for Class J fuses.

⑤ Rated 600 volts.

⑥ Non-fusible switches U/L Listed as miscellaneous switches, and fusible switches listed as recognized components.



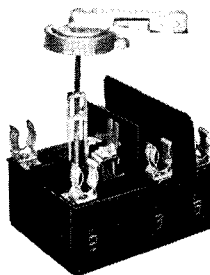
October, 1975
Supersedes Price List 29-420,
pages 3-4, dated July 1, 1974
Mailed to: E, D, C/1901, 1902/PL

Model A and T Visi-Flex
De-ion® Switches

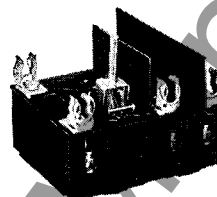
Disconnect Switches

Visi-Flex De-ion® Switches

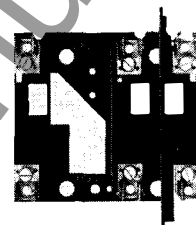
Complete Model A switch styles with fuse or non-fuse kits mounted are listed with Underwriters' Laboratories, Inc. Refer to "Electrical Construction Materials List," Miscellaneous Switches. Switches only, no fuse, fuse clip kit and all Model T switches are UL Listed as recognized components. The external operating handle of Model A can be padlocked in the Off position with up to 3 padlocks.



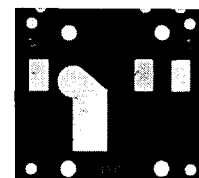
Model A



Model T



Fuse Clip Kit



No Fuse Kit

Switch Selection Data

Continuous Ampere Rating	Fuse or No-fuse Kit (See photos Above)	Model A, Adjustable Depth		Model T, Toggle Operated		Fuse Clip Kits For Model A or T NEC and Standard Time Delay③④
		Complete Unit Style Number ⑩	Switch Only⑧ Style Number (See handle and shaft below, fuse kit at right)	Complete Unit Style Number ⑩	Switch Only⑧ Style Number (See fuse kit at right)	
30	No Fuse⑦ 30 Amp 250 Volt 60 Amp 250 Volt 100 Amp 250 Volt 30 Amp 600 Volt 60 Amp 600 Volt	2607D89G01	2607D63G02	371D391G01	371D392G02	.....
		2607D89G02	2607D63G01	371D391G02	371D392G01	313C590G08
		2607D89G03	2607D63G01	371D391G03	371D392G01	313C590G09
		2607D89G04	2607D63G01	371D391G09	371D392G01	313C590G13
		2607D89G05	2607D63G01	371D391G04	371D392G01	313C590G10
		2607D89G06	2607D63G01	371D391G05	371D392G01	313C590G11
Special 60 ②	No Fuse⑦ 30 Amp 250 Volt 60 Amp 250 Volt 100 Amp 250 Volt 30 Amp 600 Volt 60 Amp 600 Volt	2607D89G07	2607D63G06	371D391G06	371D392G06	.....
		2607D89G08	2607D63G05	371D391G10	371D392G05	313C590G08
		2607D89G09	2607D63G05	371D391G07	371D392G05	313C590G09
		2607D89G10	2607D63G05	371D391G12	371D392G05	313C590G13
		2607D89G11	2607D63G05	371D391G11	371D392G05	313C590G10
		2607D89G12	2607D63G05	371D391G08	371D392G05	313C590G11
60 ②	No Fuse⑦ 30 Amp 250 Volt 60 Amp 250 Volt 100 Amp 250 Volt 200 Amp 250 Volt 30 Amp 600 Volt 60 Amp 600 Volt 100 Amp 600 Volt	2607D90G01	2607D66G14	374D362G01	657D780G12	.....
		2607D90G02	2607D66G13	374D362G02	657D780G11	177C880G23
		2607D90G03	2607D66G13	374D362G03	657D780G11	177C880G12
		2607D90G04	2607D66G13	374D362G04	657D780G11	177C880G13
		2607D90G05	2607D66G13	374D362G05	657D780G11	177C880G14
		2607D90G06	2607D66G13	374D362G06	657D780G11	177C880G24
		2607D90G07	2607D66G13	374D362G07	657D780G11	177C880G15
		2607D90G08	2607D66G13	374D362G08	657D780G11	177C880G16
100	No Fuse⑦ 60 Amp 250 Volt 100 Amp 250 Volt 200 Amp 250 Volt 60 Amp 600 Volt 100 Amp 600 Volt 200 Amp 600 Volt	2607D91G07	2607D66G18	657D779G07	657D780G16	.....
		2607D91G08	2607D66G17	.....	.....	177C880G12
		2607D91G09	2607D66G17	657D779G08	657D780G15	177C880G13
		2607D91G10	2607D66G17	657D779G09	657D780G15	177C880G14
		2607D91G11	2607D66G17	.....	.....	177C880G15
		2607D91G12	2607D66G17	657D779G10	657D780G15	177C880G16
		2607D91G13	2607D66G17	657D779G11	657D780G15	177C880G18
						

List Prices: See Price List 29-020 P WE A

Discount Symbol: CB-13 except
where noted.

Terminal Data

30, Spec. 60 Ampere Switches: #14- #4
Cu Cable Only.

60, 100 Ampere Switches: #14-1/0 Cu
Cable Only.

Dimension Reference

Switch Rating	DS 29-470 Page	Model A	Model T
30 Spec. 60	Page 9		Page 7
60, 100	Page 10		Page 8

No Fuse Kits (For Models A or T)
30, Special 60 Amp Switches
Style 313C590G14 Disc. CB-13

60, 100 Amp Switches
Style 313C363G11 Disc. CB-13

Model A External Operating Handle
Style 47A4446G21 Disc. CB-14

Model A Standard Shaft
30, Special 60 Amp Switches
Style 2607D64G01⑤ Disc. CB-13

60, 100 Amp Switches
Style 2607D65G01⑥ Disc. CB-13

② Special 60 ampere switch has same dimension as
30 amp Visi-Flex switch. Standard 60 amp switch has
same dimensions as 100 amp Visi-Flex Switch.
③ Includes fuse clips and Micarta barriers.

④ Will also accept non-rejection type current limiting
fuses:

Bussman:
15-60 amp type KTN and KTS (ferrule type)
65-200 amp type KTN and KTS (blade type)
Chase Shawmut:
15-60 amp type 1 (ferrule type)
65-200 amp type 3 (blade type)
Federal Pacific Electric:
15-200 amp types NCL and SCL

⑤ For use with panels 5 1/4" - 8 3/8" deep.

⑥ For use with panels 5 1/4" - 9 3/4" deep.

⑦ Rated 600 volts.

⑧ External operating handle, shaft and fuse or no-fuse
kit required.

⑨ Fuse or no-fuse kit required.

⑩ Model A shipped as basic switch, operating handle,
shaft and fuse or no-fuse kit. Model T shipped as
basic switch and fuse or no-fuse kit.



Guide to Replacement of Visi-Flex Switches^①

Model A, Basic Switch

Switch Type	Style Numbers in Order of Supersedure		Current Style
	Original Style	Intermediate Styles	
30 Ampere Switches			
Fusible	451D718G03	459D781G03 657D777G03 371D290G01	2607D63G01
No Fuse		459D781G04 657D777G04 371D290G02	2607D63G02
Special 60 Ampere Switches			
Fusible	451D718G07	459D781G07 657D777G07 371D290G05	2607D63G05
No Fuse		459D781G08 657D777G08 371D290G06	2607D63G06
60 Ampere Switches			
Fusible	451D251G03	459D782G03 657D782G03 657D782G13	2607D66G13
No Fuse		459D782G04 657D782G04 657D782G14	2607D66G14
100 Ampere Switches			
Fusible	451D251G07	459D782G07 657D782G07 657D782G17	2607D66G17
No Fuse		459D782G08 657D782G08 657D782G18	2607D66G18

Model T, Basic Switch

Switch Type	Style Numbers in Order of Supersedure		Current Style
	Original Style	Intermediate Style	
30 Ampere Switches			
Fusible	451D717G01	657D776G01	371D392G01
No Fuse		657D776G02	371D392G02
Special 60 Ampere Switches			
Fusible	451D717G05	657D776G05	371D392G05
No Fuse		657D776G06	371D392G06
60 Ampere Switches			
Fusible	451D252G01	657D780G01	657D780G11
No Fuse		657D780G02	657D780G12
100 Ampere Switches			
Fusible	451D252G05	657D780G05	657D780G15
No Fuse		657D780G06	657D780G16

Model A, Complete Switch

Fuse or No Fuse Kit (See Page 3)	Style Numbers of Superseded Switches			Current Style
	Original Style	Intermediate Styles		
30 Ampere Switches				
No Fuse	451D716G14	657D775G14	371D289G01	2607D89G01
30 Amp 250 Volt	451D716G15	657D775G15	371D289G02	2607D89G02
60 Amp 250 Volt	451D716G16	657D775G16	371D289G03	2607D89G03
100 Amp 250 Volt	451D716G17	657D775G17	371D289G04	2607D89G04
30 Amp 600 Volt	451D716G18	657D775G18	371D289G05	2607D89G05
60 Amp 600 Volt	451D716G19	657D775G19	371D289G06	2607D89G06
Special 60 Ampere Switches				
No Fuse	451D716G20	657D775G20	371D289G07	2607D89G07
30 Amp 250 Volt	451D716G21	657D775G21	371D289G08	2607D89G08
60 Amp 250 Volt	451D716G22	657D775G22	371D289G09	2607D89G09
100 Amp 250 Volt	451D716G23	657D775G23	371D289G10	2607D89G10
30 Amp 600 Volt	451D716G24	657D775G24	371D289G11	2607D89G11
60 Amp 600 Volt	451D716G25	657D775G25	371D289G12	2607D89G12
60 Ampere Switches				
No Fuse	451D246G19	657D781G19	374D363G01	2607D90G01
30 Amp 250 Volt	451D246G20	657D781G20	374D363G02	2607D90G02
60 Amp 250 Volt	451D246G21	657D781G21	374D363G03	2607D90G03
100 Amp 250 Volt	451D246G22	657D781G22	374D363G04	2607D90G04
200 Amp 250 Volt	451D246G23	657D781G23	374D363G05	2607D90G05
30 Amp 600 Volt	451D246G24	657D781G24	374D363G06	2607D90G06
60 Amp 600 Volt	451D246G25	657D781G25	374D363G07	2607D90G07
100 Amp 600 Volt	451D246G26	657D781G26	374D363G08	2607D90G08
100 Ampere Switches				
No Fuse	451D246G27	657D781G27	657D781G07	2607D91G07
60 Amp 250 Volt	451D246G28	657D781G28	657D781G08	2607D91G08
100 Amp 250 Volt	451D246G29	657D781G29	657D781G09	2607D91G09
200 Amp 250 Volt	451D246G30	657D781G30	657D781G10	2607D91G10
60 Amp 600 Volt	451D246G31	657D781G31	657D781G11	2607D91G11
100 Amp 600 Volt	451D246G32	657D781G32	657D781G12	2607D91G12
200 Amp 600 Volt	451D246G33	657D781G33	657D781G13	2607D91G13

Model T, Complete Switches

Fuse or No Fuse Kit (See Page 3)	Style Numbers in Order of Distribution			Current Style
	Original Style	Intermediate Style		
30 Ampere Switches				
No Fuse	451D715G14	657D774G14	371D391G01	
30 Amp 250 Volt	451D715G15	657D774G15	371D391G02	
60 Amp 250 Volt	451D715G16	657D774G16	371D391G03	
30 Amp 600 Volt	451D715G17	657D774G17	371D391G04	
60 Amp 600 Volt	451D715G18	657D774G18	371D391G05	
100 Amp 250 Volt	451D715G22	657D774G22	371D391G09	
Special 60 Ampere Switches				
No Fuse	451D715G19	657D774G19	371D391G06	
60 Amp 250 Volt	451D715G20	657D774G20	371D391G07	
60 Amp 600 Volt	451D715G21	657D774G21	371D391G08	
30 Amp 250 Volt	451D715G23	657D774G23	371D391G10	
30 Amp 600 Volt	451D715G24	657D774G24	371D391G11	
100 Amp 250 Volt	451D715G25	657D774G25	371D391G12	
60 Ampere Switches				
No Fuse	451D245G20	657D779G20	374D362G01	
60 Amp 250 Volt	451D245G21	657D779G21	374D362G03	
100 Amp 250 Volt	451D245G22	657D779G22	374D362G04	
200 Amp 250 Volt	451D245G23	657D779G23	374D362G05	
60 Amp 600 Volt	451D245G24	657D779G24	374D362G07	
100 Amp 600 Volt	451D245G25	657D779G25	374D362G08	
30 Amp 250 Volt	451D245G32	657D779G32	374D362G02	
30 Amp 600 Volt	451D245G33	657D779G33	374D362G06	
100 Ampere Switches				
No Fuse	451D245G26	657D779G26	657D779G07	
100 Amp 250 Volt	451D245G27	657D779G27	657D779G08	
200 Amp 250 Volt	451D245G28	657D779G28	657D779G09	
100 Amp 600 Volt	451D245G30	657D779G30	657D779G10	
200 Amp 600 Volt	451D245G31	657D779G31	657D779G11	

^① The style listed as current is physically interchangeable with all previous styles listed. Model A switches must be ordered complete with operating shaft as listed on page 3.



October, 1975
Supersedes Price List 29-420,
pages 5-6, dated July 1, 1974.
Mailed to: E, D, C/1901, 1902/PL

Model A and T Visi-Flex
De-ion® Switches

Disconnect Switches

Visi-Flex De-ion® Switches, Continued

Accessories

List Prices: See Price List 29-020 PWE A
Disc. Symbol: CB-13

Auxiliary Switch Kits

For Model A and T Switches

Permits field mounting of an auxiliary switch for separate control circuit applications. Provides a SPDT switch with 1A and/or 1B contacts. Includes three 18" soldered leads identified.

Complete Kit Style No.	For Use With
315C293G01②	{ 30 and Spec. 60 Amp Switch 60 and 100 Amp Switch

Extra Long Vari-Depth Shaft

For Model A Switches

Order in place of standard shaft when required.

Switch Ampere Rating	Panel Depth Long Shaft	Style Number
30	8 $\frac{1}{16}$ "-13 $\frac{1}{16}$ "③	2607D65G02
Spec. 60	8 $\frac{1}{16}$ "-13 $\frac{1}{16}$ "③	2607D65G02
60	9 $\frac{1}{16}$ "-14"	2607D65G02
100	9 $\frac{1}{16}$ "-14"	2607D65G02

Special Visi-Flex Switches

Visi-Flex Switches With Auxiliary Switch Internally Mounted

Basic switch only. Also order no fuse kit, fuse kit, operating handle and shaft as required.

Ampere Rating	For Use Without Fuses	For Use With Fuses
Model A		
30	2607D63G04	2607D63G03
Spec. 60	2607D63G08	2607D63G07
60	2607D66G16	2607D66G15
100	2607D66G20	2607D66G19
Model T		
30	371D392G04	371D392G03
Spec. 60	371D392G08	371D392G07
60	657D780G14	657D780G13
100	657D780G08	657D780G07

Special Fuse Kits

For Model A and/or T switches. Order in place of standard fuse clips.

Current Limiting, Class J

Switch Type, Rating	Fuse Kit	
	Rating	Style Number
Model A 30 Spec. 60	30a./600v.	503C690G01
	60a./600v.	503C690G02
	100a./600v.	503C690G03
Model A 60 100	30a./600v.	503C690G15
	60a./600v.	503C690G16
	100a./600v.	503C690G17
	200a./600v.	503C690G18
Model T 30 Spec. 60	30a./600v.	503C690G04
	60a./600v.	503C690G05
	100a./600v.	503C690G06
Model T 60 100	30a./600v.	503C690G19
	60a./600v.	503C690G20
	100a./600v.	503C690G21
	200a./600v.	503C690G22

② Order instruction sheet 12641.

③ For panel depth of 8 $\frac{1}{16}$ " to 9 $\frac{1}{16}$ " a minimum of 1 $\frac{1}{4}$ " must be cut from bottom of shaft.

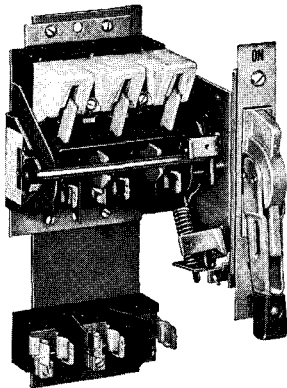
④ Does not apply to special 60 ampere switch since these fuse clips cannot be added.

Maximum Horsepower Ratings

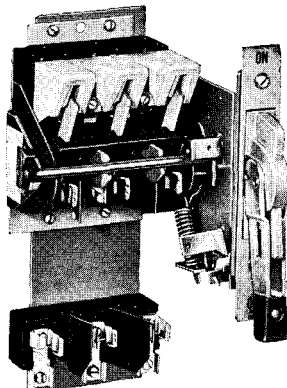
Fuse Clip Ratings	Maximum Horsepower Ratings									
	120 Volts Ac		240 Volts Ac		480 Volts Ac		600 Volts Ac		250 Volts Dc	
	Standard	Time Delay	Standard	Time Delay	Standard	Time Delay	Standard	Time Delay	Standard	Time Delay
30 Ampere Switch										
Unfused	3	...	7 $\frac{1}{2}$	...	20	...	25	...	5	...
30a./250v.	1 $\frac{1}{2}$	3	3	7 $\frac{1}{2}$	...	...	...	...	5	...
60a./250v.	3	...	5	...	...	...	...	...	5	...
100a./250v.	3	...	5	...	...	...	...	...	5	...
30a./600v.	...	...	...	...	5	15	7 $\frac{1}{2}$	20	5	...
60a./600v.	...	...	...	...	15	...	20	...	5	...
60 Ampere Switch (and Special 60 Ampere Switch)										
Unfused	7 $\frac{1}{2}$	...	20	...	40	...	50	...	10	...
30a./250v.	1 $\frac{1}{2}$	3	3	7 $\frac{1}{2}$	...	...	...	...	5	...
60a./250v.	3	7 $\frac{1}{2}$	7 $\frac{1}{2}$	15	...	...	...	...	10	...
100a./250v.	...	...	15	...	...	...	...	...	10	...
200a./250v.④	...	...	15	...	...	...	...	...	...	...
30a./600v.	...	...	...	...	5	15	7 $\frac{1}{2}$	20	5	...
60a./600v.	...	...	...	...	15	30	15	50	10	...
100a./600v.④	...	...	15	...	25	30	30	40	10	...
100 Ampere Switch										
Unfused	15	...	30	...	60	...	75	...	20	...
30a./250v.	1 $\frac{1}{2}$	3	3	7 $\frac{1}{2}$	...	...	...	...	5	...
60a./250v.	3	7 $\frac{1}{2}$	7 $\frac{1}{2}$	15	...	...	...	...	10	...
100a./250v.	15	15	15	30	...	...	...	...	20	...
200a./250v.	15	15	15	30	...	...	...	...	20	...
30a./600v.	...	...	...	...	5	15	7 $\frac{1}{2}$	20	...	...
60a./600v.	...	...	...	...	15	30	15	50	...	...
100a./600v.	...	...	...	...	25	60	30	75	...	...
200a./600v.	...	...	...	...	25	60	30	75	...	...



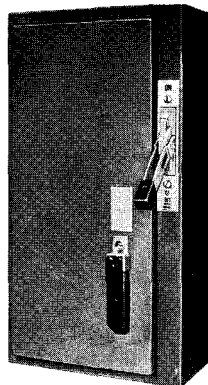
Type MD Safety Disconnect Switch



Terminal Version



Tang Version



Typical Application

The type MD safety disconnect switch is for right hand mounting only and is constructed of parts from the type H-600 safety switch and type SM safety handle mechanism, completely preassembled on a mounting plate for simplified customer installation. Handles are 5½ inches long and can be padlocked in "OFF" position using as many as three locks.

Type MD switches are available with either pressure-type or tang-type terminals on both line and load ends. The tang terminals will accept a wide range of single and double indent ring-type compression lugs for heavy duty applications.

Order desired MD safety disconnect switch from table below, plus choice of door hardware from page 7 for complete applications. Dress nameplate required to meet automotive specifications is available from accessories.

Listed with Underwriters' Laboratories, Inc. re-examination service except as noted.

The Westinghouse type MD safety disconnect switch is designed to prevent tampering by unauthorized individuals and provides the optimum in personnel safety. When

properly installed, these switches conform to NEMA 12 and J. I. C. requirements and are thus well-suited for use by the automotive and machine tool industries.

Switch Selection Data List Prices: See Price List 29-020 P WE A, Disc. CB-13

Ampere Rating		Catalog Number		List Prices	Horsepower Ratings						250 Volt Dc ②
Switch	Fuse Clips	Terminal Version	Tang Version ③⑤		250 Volt Ac		480 Volt Ac		600 Volt Ac		
					Standard N. E. C.	Maximum Time Delay	Standard N. E. C.	Maximum Time Delay	Standard N. E. C.	Maximum Time Delay	
3-Pole, 250 Volt Ac, 250 Volt Dc											
30	30	MD121	MD121A	\$ 65	3	7½	...	...	...	...	5
	60	MD122	MD122A	66	7½	10	...	...	...	...	5
60	60	MD222	MD222A	68	7½	15	...	...	...	...	10
	100	MD223	MD223A	80	15	20	...	...	...	...	10
100 ③	100	MD323	MD323A	105	15	30	...	...	...	...	20
	200	MD324	MD324A	118	25	30	...	...	...	...	20
200 ③	200	MD424	MD424A	211	25	60	...	...	...	...	40
	400	MD425④	.....	292	50	60	...	...	...	...	40
3-Pole, 600 Volt Ac											
30	Unfused	MD16U	MD16UA	61	10	...	15	...	20	...	5
	30	MD161	MD161A	66	...	...	5	15	7½	20	..
	60	MD162	MD162A	68	...	...	15	15	20	20	..
60	Unfused	MD26U	MD26UA	68	20	...	30	...	40	...	10
	60	MD262	MD262A	69	...	...	15	30	15	50	..
	100	MD263	MD263A	83	...	...	25	30	30	50	..
100 ③	Unfused	MD36U	MD36UA	98	30	...	60	...	75	...	20
	100	MD363	MD363A	107	...	...	25	60	30	75	..
	200	MD364	MD364A	124	...	...	50	...	60	...	..
200 ③	Unfused	MD46U	MD46UA	173	60	...	100	...	100	...	40
	200	MD464	MD464A	211	...	...	50	100	60	100	..
	400	MD465④	.....	293	...	...	100	...	100	...	..

Switches for NEMA 4 Applications

Switches with chrome plated housing, stainless steel parts and special gasketing can be supplied. Order by description.

Withstandability Ratings

Switch Rating	I²T (Amperes² Seconds)
30	.20 x 10⁶
60	.74 x 10⁶
100	1.45 x 10⁶
200	4.75 x 10⁶

For door hardware, accessories and wire range data, see page 7.

② Using two outer poles of switch.

③ Not listed with Underwriters' Laboratories, Inc.

④ Supplied as unfused switch with separate fuse blocks.

⑤ Does not include ring-type compression connectors.



October, 1975
Supersedes Price List 29-420,
pages 7-8 dated July 1, 1974.
Mailed to E, D, C/1901, 1902/PL

Type MD Safety Disconnect Switch

Disconnect Switches

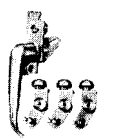
Type MD Safety Disconnect Switch, *Continued*

List Prices: See Price List 29-020 PWE A **Accessories**

Door Hardware

Three choices of door hardware plus an auxiliary handle are offered to provide the best latching scheme for individual needs. For maximum security, door hardware is designed with a provision for padlocking, and a coin-proof slot requires the use of a screwdriver to open door.

Select desired hardware below. Additional latches can be ordered from "accessories" section if required.

Hardware Unit	Description
	With sliding latches for smaller panels up to approx. 30" high. Catalog Number: DH1R Discount Symbol CB-14
	With 2 roller latches for intermediate panels up to approx. 40" high. Catalog Number: DH2R Discount Symbol CB-14
	With 3 roller latches for larger panels approx. 40" and higher. Catalog Number: DH3R Discount Symbol CB-14
	Auxiliary handle for larger panels. Catalog Number: DH4R Discount Symbol CB-14

For Switch and Door Hardware



Dress Nameplate: Required to meet automotive specifications. Mounts from inside enclosure and covers mounting bolts, making mechanism non-removable when enclosure door is closed.

Style Number: 373D298G05
Discount Symbol CB-14

Auxiliary Latch Kit: Provides an additional latch for use with applications on larger panels where two point latching may not be adequate.

For Door Hardware Using Sliding Latches

Style Number: 656D669G01
Discount Symbol CB-14

For Door Hardware Using Roller Latches

Style Number: 370D801G04
Discount Symbol CB-14

Electrical Interlock Kit: Provides one NO and one NC contact (SPDT contact block) for auxiliary control circuits. Mounts to mechanism frame.

For 30, 60 Amp. Switches
Style Number: 624B069G01
Discount Symbol CB-13

For 100, 200 Amp. Switches
Style Number: 624B069G02
Discount Symbol CB-13

Accessories, *Continued*

Door Operated Interlock Defeater Kit for Type MD Disconnect: Required when door hardware is not used, operates as door closes. Additional door securing means such as screw latch, also required (to be supplied by box manufacturer).

Style Number: 623B214G01

Discount Symbol CB-13

Replacement Handle Knob Kits

Red Nylon; Style No. 374D377G03

Discount Symbol CB-13

Wire Range Data

Switches and fuse blocks are supplied with copper terminals Underwriters' Laboratories, Inc. listed for use with the following cable sizes.

Terminal Version

Switch Rating		Cable Size and Type
Amperes	Volts	
30, 60	250	#14- #2 aluminum and copper
	600	
100	250	#14-1/0 aluminum and copper
	600	
200	250	#6-250 MCM aluminum and copper
	600	

Tang Version Terminal Data

Switch Rating, Amperes	Mounting Hardware	Line	Load
30, 60	10-32 Thread	#12 to #8 Burndy Hylug Type YAV #6 to #2 Burndy Hylug Types YA (single hole) and YA-L #6 to #2 MAC Series MR Type MRA and Series MS Type MSA #6 to #2 Penn Union Type BLU or BBLU (1 hole lugs)	#12 to #8 Burndy Hylug Type YAV #6 Burndy Hylug Types YA (single hole) and YA-L #6 MAC Series MR Type MRA and Series MS Type MSA #6 Penn Union Type BLU or BBLU (1 hole lugs)
100	1/4-20 Thread	#4 to #1 Burndy Hylug Type YA (single hole) #4 to #1 MAC Series MR Type MRA and Series MS Type MSA #4 to #1 Penn Union Type BLU or BBLU (1 hole lugs)	#4 to #1 Burndy Hylug Type YA (single hole) #4 to #1 MAC Series MR Type MRA and Series MS Type MSA #4 to #1 Penn Union Type BLU or BBLU (1 hole lugs)
200	3/8-18 Thread	#1 to 4/0 Burndy Hylug Type YA (single hole) and YA-U #1 to 4/0 MAC Series MR Type MRA and Series MS Type MSA #1 to 4/0 Penn Union Type BLU or BBLU (1 hole lugs)	#2 to #1 Burndy Hylug Type YA (single hole) #2 to #1 MAC Series MR Type MRA and Series MS Type MSA #2 to #1 Penn Union Type BLU or BBLU (1 hole lugs)



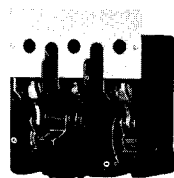


May, 1983
Supersedes Price List 29-420, pages 1-2,
dated July, 1977
Mailed to: E, D, C/1901, 1902/PL

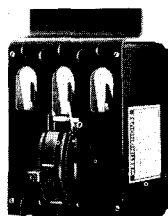
30, 60, 100 Amperes De-ion® Switches
Type DS 30, 60, 100, 200, 400, 600 Amperes

Disconnect Switches

De-ion® Switch® 30, 60, 100 Amperes



30 and 60 Ampere



100 Ampere

Note: These switches are **not** UL Listed. For
UL Listed switches, see Type DS on page 2.

Ratings●●

Volts Ac	Maximum Hp, 3 Phase		
	Switch		
	30 Amp	60 Amp	100 Amp●
125	5	7½	20
240	10	20	40
480	20	40	75
600	25	50	100
(250v Dc)	5	10	20

Dimensions●

Switch	Dimension Reference
30	D. S. 29-470, Page 3
60	D. S. 29-470, Page 3
100	D. S. 29-470, Page 3

Base Mounting Hardware

No additional charge for mounting hardware. Specify when required.

For General Use and With Sliding Plate Mechanisms●

Style 1720 936 for 30 and 60 ampere
models.

Style 1720 937 for 100 ampere model.

For Use with Vari-Depth Mechanisms●

Style 21C6782G12 for 30 and 60 ampere
models.

Style 21C6782G13 for 100 ampere model.

Selection Data

Ampere Rating	Copper Only Cable Size	Style Number	Approx. Ship. Wt./Lbs.
Standard Models			
30	#14-6	371D266G02	3
60	#14-4	371D266G01	3
100	#14-1/0	657D772G02	5
200	Use Type DS Switch on page 2, or Molded Case Switch from T.D. 29-120		
400			
800			
Long Handle Models^①			
30	#14-6	371D266G04	3¼
60	#14-4	371D266G03	3¼
100	#14-1/0	657D772G07	5¼

Models With Auxiliary Switches: Similar to standard models, except with one external (RH side) SPDT auxiliary switch having 1-A and 1-B contacts. One inch additional mounting space required on right side of De-ion Switch for auxiliary switch.

Ampere Rating	Copper Only Cable Size	Style Number	Approx. Ship. Wt./Lbs.
Standard Models With Auxiliary Switches			
30	#14-6	504C123G01	3¼
60	#14-4	504C123G02	3¼
100	#14-1/0	504C123G03	5¼
Long Handle Models With Auxiliary Switches①			
30	#14-6	504C123G06	3½
60	#14-4	504C123G05	3½
100	#14-1/0	504C123G07	5½

Accessories

Type MD Fuse Blocks

Following styles include two complete fuse blocks, plus mounting hardware. All blocks are three pole and are supplied with terminals listed for either AL or CU cable.

Catalog Number	Description	Wire Range
FBK321	30 A-250 V	#14-#2 Cu/Al
FBK361	30 A-600 V	#14-#2 Cu/Al
FBK322	60 A-250 V	#14-#2 Cu/Al
FBK362	60 A-600 V	#14-#2 Cu/Al
FBK363	100 A-250 and 600 V	#14-1/0 Cu/Al
FBK364	200 A-250 and 600 V	#6-250 MCM Cu/Al

Fuse Clip Conversion Kits

Fit above fuse blocks; used to increase or decrease fuse rating. Includes 6 fuse clips and required spacers.

Catalog Number	Description	For Use With
FC12	30 A-250 V	30 or 60 A Fuse Block
FC16	30 A-600 V	
FC22	60 A-250 V	
FC26	60 A-600 V	
FC36	100 A-250 and 600 V	100 A Fuse Block
FC46	200 A-250 and 600 V	

● Changed since previous issue.

① Longer handles render these switches unsuitable for use with Vari-depth handle mechanisms.

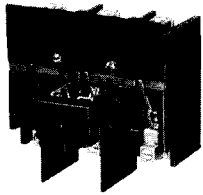
② Switch nameplate shows no ratings above 50 hp. However, switch design permits these maximum hp. ratings to be applied.



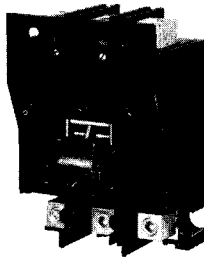
Type DS Disconnect Switches, Fusible and Non-Fusible

Description

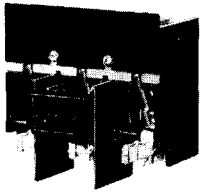
Type DS disconnect is a compact load break switch using the De-ion arc quenching principle and quick make-quick break over center toggle mechanism. It has visible contacts, is Underwriters' Laboratories, Inc. listed, and is available either as a fusible or non-fusible switch.⑥



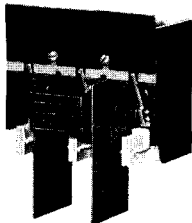
100 Amp Non-Fusible



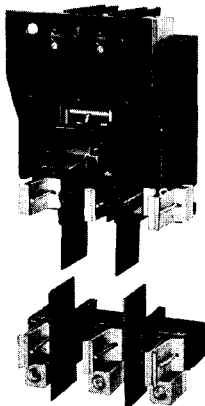
200 Amp Non-Fusible



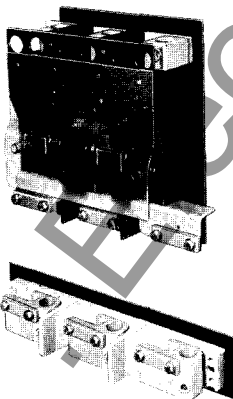
30 Amp Fusible



100 Amp Fusible



200 Amp Fusible



400 Amp Fusible

Selection Data

List Prices: Price List 29-020
Discount Symbol CB-13

Switch Rating	Fuse Clip Rating Amps	Type ④	Volts	Cat. No. Complete ⑧ ⑨
30	No Fuse⑤	...	...	DS16U
30	30	NEC	250	DS121R
30	30	NEC	600	DS161R
30	60	NEC	250	DS122
30	60	NEC	600	DS162
60	No Fuse⑤	...	...	DS26U
60	60	NEC	250	DS222R
60	60	NEC	600	DS262R
60	100	NEC	250/600	DS263
100	No Fuse⑤	...	...	DS36U
100	100	NEC	250/600	DS363R
100③	200	NEC	250/600	DS364
200	No Fuse⑤	...	...	DS46U
200	200	NEC	250/600	DS464R
200② ③	400	NEC	250/600	DS465
400	No Fuse⑤	...	...	DS56U
400	400	NEC	250/600	DS565R
600	No Fuse⑤	...	...	DS66U
600	600	NEC	250/600	DS666R

DS Switch Application⑩

Maximum switch-fuse application based on short circuit current withstand (symmetrical amperes).

Switch Rating Amps	Maximum Application at 240, 480 or 600 Volts Ac	Class R Fuses	Current Limiting Fuse Class J
30	200,000	200,000	200,000
60	200,000	200,000	200,000
100	200,000	200,000	200,000
200	200,000	200,000	200,000
400	100,000⑦	200,000	200,000
600	100,000⑦	200,000	200,000

DS Switching Interrupting Ratings

Switch Rating (Amps)	Interrupting Rating (Amps) 3 Phase, 600 Volt Sym.
30	950
60	1700
100	1800
200	3600

Base Mounting Hardware

Order separately when required.
No charge when ordered with switch.

30, 60, 100 Amp Non-fusible:

Style No. 624B375G17

30, 60, 100 Amp Fusible:

Style No. 624B375G17

200 Amp Non-fusible:

Style No. 624B375G07

200 Amp Fusible: Style No. 624B375G08

400 or 600 Amp Non-fusible:

Style No. 673B125G04

400 or 600 Amp Fusible:

Style No. 673B125G05

Auxiliary Switch Kits (Dis. CB-13)

Permits field mounting of an auxiliary switch for separate control circuit applications. Each switch includes three soldered, identified leads. Rated 250 volts max.

Switch Used With	Contact Arrangement	Kit Style Number
30, 60, 100 Amp.	1A, 1B	178C265G03
200 Amp.	1A, 1B	178C619G01
200 Amp.	2A's, 2B's	178C619G02

Further Information

Dimensions and Drillings: DS 29-470
Handle Mechanisms: 29-520 T WE A
List Prices: PL 29-020

⑥ Changed since previous issue.

⑦ Not listed with Underwriters' Laboratories, Inc.

⑧ Supplied as unfused switch with separate fuse blocks.

⑨ 600 volt ratings are suitable for Class J fuses.

⑩ Rated 600 volts.

⑪ Switches through 200 amp are UL Listed as miscellaneous switches; 400 and 600 amp switches are UL recognized components.

⑫ 480 Volts Max.

⑬ Switches with catalog number suffix R are UL listed for use with Class R fuses when fuse clip conversion kits listed on the following page are used.

⑭ Switches with catalog number suffix R or U are CSA listed.

⑮ If used with fuses other than Class J or Class R, the maximum circuit application is 10,000 amps, 600 volts.



September, 1983
Supersedes Technical Data 29-420,
pages 2.1-2.2 dated July, 1977
Mailed to: E, D, C/1901, 1902/PL

Page 3: Type DS 30, 60, 100, 200, 400, 600
Amperes, Fusible and Non-Fusible
Page 4: Visi-Flex De-ion® Switches

Disconnect Switches

Type DS Disconnect Switches, Fusible and Non-Fusible, Continued

Maximum Horsepower Ratings

Type Switch	Maximum Horsepower Ratings								Discount Symbol CB-15				
	120 Volts Ac		240 Volts Ac		480 Volts Ac		600 Volts Ac		250 Volts Dc	Switch Rating		Kit	
	Standard	Time Delay	Standard	Time Delay	Standard	Time Delay	Standard	Time Delay		Amps	Volts	Catalog Number	Style Number
DS16U	5	...	10	...	20	...	25	...	7½				
DS121R	1½	3	3	7½	...	...	...	...	5	30	250	RFK121	2609D97G01
DS122	3	...	7½	...	...	...	...	...	5	30	600	RFK161	2609D97G02
DS161R	...	...	...	...	5	15	7½	20	5	60	250	RFK222	2609D97G03
DS162	...	...	...	...	15	...	15	...	5	60	600	RFK262	2609D97G04
										100	250/600	RFK464	750B249G01
DS26U	10	...	20	...	40	...	60	...	15	200	250/600	RFK464	750B249G01
DS222R	3	7½	7½	15	...	...	...	...	10	400	250/600	RFK666	750B427G01
DS262R	...	...	...	...	15	30	15	50	10	600	250/600	RFK666	750B427G01
DS263	...	...	15	...	25	...	30	...	10				
DS36U	15	...	30	...	75	...	75	...	25				
DS363R	...	...	15	30	25	60	30	75	20				
DS364	...	...	25	...	50	...	60	...	20				
DS46U	...	...	60	...	125	...	150	...	40				
DS464R	...	...	25	60	50	125	60	150	40				
DS465	...	...	50	60	100	...	100	...	40				
DS56U	...	...	100	...	250	...	350	...	..				
DS565R	...	...	50	100	100	250	125	350	..				
DS66U	...	...	100	...	400	...	500	...	..				
DS666R	...	...	75	100	150	400	200	500	..				

Class R Fuse Clip Conversion Kits for Type DS Switches

List Prices: Price List 29-020
Discount Symbol CB-15

Terminal Data

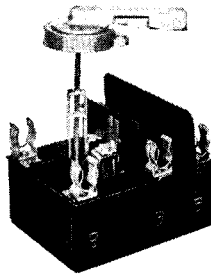
Terminals are suitable for either copper or aluminum cable.

Switch Rating	Wire Range	
	Copper	Aluminum
30	#14-#2	#12-#2
60	#14-#2	#12-#2
100	#14-0	#12-0
200	#4-300 MCM	#4-300 MCM
400	(1)#4-600 MCM or (2)1/0-3/0	(1)#4-600 MCM or (2)1/0-250 MCM
600	Same as 400A except two terminals per pole	

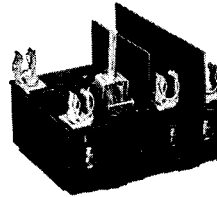


Visi-Flex De-ion® Switches

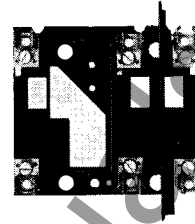
Complete Model A switch styles with fuse or non-fuse kits mounted are listed with Underwriters' Laboratories, Inc. Refer to "Electrical Construction Materials List," Miscellaneous Switches. Switches only, no fuse, fuse clip kit and all Model T switches are UL recognized components. The external operating handle of Model A can be padlocked in the Off position with up to 3 padlocks.



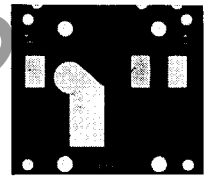
Model A



Model T



Fuse Clip Kit



No Fuse Kit

Switch Selection Data

Continuous Ampere Rating	Fuse or No-fuse Kit (See photos Above)	Model A, Adjustable Depth		Model T, Toggle Operated		Fuse Clip Kits for Model A or T ^④ Style Number (No Fuse Kit - See Below)	
		Complete Unit Style Number ^⑧ (Includes Std. Class K or H Fuse Clips)	Switch Only ^⑨ Style Number (See handle and shaft below, fuse kit at right)	Switch Only ^⑨ Style Number (See Fuse kit at right)	Style Number (See Fuse kit at right)	Clips for Class K or H Fuses ^④	Clips for Class R Fuses Only ^⑪
30	No Fuse ^⑦ 30 Amp 250 Volt 60 Amp 250 Volt 100 Amp 250 Volt 30 Amp 600 Volt 60 Amp 600 Volt	2607D89G01	2607D63G02	371D392G02	371D392G01	313C590G08	1226C94G01
		2607D89G02	2607D63G01	371D392G01	371D392G01	313C590G09	1226C94G03
		2607D89G03	2607D63G01	371D392G01	371D392G01	313C590G13	1226C94G05
		2607D89G04	2607D63G01	371D392G01	371D392G01	313C590G10	1226C94G02
		2607D89G05	2607D63G01	371D392G01	371D392G01	313C590G11	1226C94G04
		2607D89G06	2607D63G01	371D392G01	371D392G01		
Special 60 ^②	No Fuse ^⑦ 30 Amp 250 Volt 60 Amp 250 Volt 100 Amp 250 Volt 30 Amp 600 Volt 60 Amp 600 Volt	2607D89G07	2607D63G06	371D392G06	371D392G05	313C590G08	1226C94G01
		2607D89G08	2607D63G05	371D392G05	371D392G05	313C590G09	1226C94G03
		2607D89G09	2607D63G05	371D392G05	371D392G05	313C590G13	1226C94G05
		2607D89G10	2607D63G05	371D392G05	371D392G05	313C590G10	1226C94G02
		2607D89G11	2607D63G05	371D392G05	371D392G05	313C590G11	1226C94G04
		2607D89G12	2607D63G05	371D392G05	371D392G05		
60 ^②	No Fuse ^⑦ 30 Amp 250 Volt 60 Amp 250 Volt 100 Amp 250 Volt 200 Amp 250 Volt 30 Amp 600 Volt 60 Amp 600 Volt 100 Amp 600 Volt	2607D90G01	2607D66G14	657D780G12	657D780G11	177C880G23	1226C94G06
		2607D90G02	2607D66G13	657D780G11	657D780G11	177C880G12	1226C94G08
		2607D90G03	2607D66G13	657D780G11	657D780G11	177C880G13	1226C94G10
		2607D90G04	2607D66G13	657D780G11	657D780G11	177C880G14	
		2607D90G05	2607D66G13	657D780G11	657D780G11	177C880G24	1226C94G07
		2607D90G06	2607D66G13	657D780G11	657D780G11	177C880G15	1226C94G09
		2607D90G07	2607D66G13	657D780G11	657D780G11	177C880G16	1226C94G11
		2607D90G08	2607D66G13	657D780G11	657D780G11		
		2607D91G07	2607D66G18	657D780G16	657D780G15	177C880G12	1226C94G08
		2607D91G08	2607D66G17	657D780G15	657D780G15	177C880G13	1226C94G10
100	No Fuse ^⑦ 60 Amp 250 Volt 100 Amp 250 Volt 200 Amp 250 Volt 60 Amp 600 Volt 100 Amp 600 Volt 200 Amp 600 Volt	2607D91G09	2607D66G17	657D780G15	657D780G15	177C880G14	
		2607D91G10	2607D66G17	657D780G15	657D780G15	177C880G15	1226C94G09
		2607D91G11	2607D66G17	657D780G15	657D780G15	177C880G16	1226C94G11
		2607D91G12	2607D66G17	657D780G15	657D780G15		
		2607D91G13	2607D66G17	657D780G15	657D780G15		

List Prices: Price List 29-020

Discount Symbol: CB-13 except where noted

Terminal Data

30, Spec. 60 Ampere Switches: #14-#4 Cu Cable Only.
60, 100 Ampere Switches: #14-1/0 Cu Cable Only.

Dimension Reference

Switch Rating	DS 29-470 Page	Model A	Model T
30 Spec. 60	Page 9		Page 7
60, 100	Page 10		Page 8

No Fuse Kits (For Models A or T)^⑦

30, Special 60 Amp Switches
Style 313C590G14 Disc. CB-13

60, 100 Amp Switches
Style 313C363G11 Disc. CB-13

Model A External Operating Handle
Style 47A4446G21 Disc. CB-14

Model A Standard Shaft
30, Special 60 Amp Switches
Style 2607D64G01^⑥ Disc. CB-13

60, 100 Amp Switches
Style 2607D65G01^⑥ Disc. CB-13

^⑥ Changed or added since previous issue.

^② Special 60 ampere switch has same dimension as 30 amp Visi-Flex switch. Standard 60 amp switch has same dimensions as 100 amp Visi-Flex Switch.

^③ Includes fuse clips and Micarta barriers, and when applicable, Class R rejection feature.

^④ Switches with these fuse clips suitable for use on circuits capable of delivering not more than 10,000 amps, RMS symmetrical, up to 600 volts Ac.

^⑤ For use with panels 5 1/16" - 8 7/16" deep.

^⑥ For use with panels 5 1/16" - 9 3/16" deep.

^⑦ Rated 600 volts. Non-fusible switches suitable for circuits with 10,000 amps RMS maximum, when protected by standard fuses or circuit breaker with the same continuous rating as the switch. When protected by Class J or R fuses with ratings not exceeding the switch rating, they are suitable for circuits with 100,000 amps, RMS symmetrical maximum.

^⑧ External operating handle, shaft and fuse or no-fuse kit required.

^⑨ Fuse or no-fuse kit required.

^⑩ Shipped as basic switch, operating handle, shaft and fuse or no-fuse kit.

^⑪ Switches with these fuse clips and Class R fuses suitable for use on circuits capable of delivering not more than 100,000 amps, RMS symmetrical, up to 600 volts Ac.



September, 1983
Supersedes Technical Data 29-420 T WE A,
pages 3-4, dated October, 1975
Mailed to: E, D, C/1901, 1902/PL

Model A and T Visi-Flex
De-ion® Switches

Disconnect Switches

Visi-Flex De-ion® Switches, Continued

Accessories

List Prices: Price List 29-020
Disc. Symbol: CB-13

Auxiliary Switch Kits

For Model A and T Switches

Permits field mounting of an auxiliary switch for separate control circuit applications. Provides a SPDT switch with 1A and/or 1B contacts. Includes three 18" soldered leads identified.

Complete Kit Style No.	For Use With
315C293G01②	30 and Spec. 60 Amp Switch 60 and 100 Amp Switch

Extra Long Vari-Depth Shaft

For Model A Switches

Order in place of standard shaft when required.

Switch Ampere Rating	Panel Depth Long Shaft	Style Number
30	8 ³ / ₁₆ -13 ¹ / ₁₆ ③	2607D65G02
Spec. 60	8 ³ / ₁₆ -13 ¹ / ₁₆ ③	2607D65G02
60	9 ³ / ₃₂ -14 ¹ / ₈	2607D65G02
100	9 ³ / ₃₂ -14 ¹ / ₈	2607D65G02

Maximum Horsepower Ratings

Fuse Clip Ratings	Maximum Horsepower Ratings						250 Volts Dc		
	120 Volts Ac		240 Volts Ac		480 Volts Ac			600 Volts Ac	
	Standard	Time Delay	Standard	Time Delay	Standard	Time Delay		Standard	Time Delay
30 Ampere Switch									
Unfused	3	...	7½	...	20	...	25	...	5
30a./250v.	1½	3	3	7½	...	...	...	...	5
60a./250v.	3	...	5	...	...	...	...	...	5
100a./250v.	3	...	5	...	...	...	...	...	5
30a./600v.	...	...	...	...	5	15	7½	20	5
60a./600v.	...	...	...	...	15	...	20	...	5
60 Ampere Switch (and Special 60 Ampere Switch)									
Unfused	7½	...	20	...	40	...	50	...	10
30a./250v.	1½	3	3	7½	...	...	...	...	5
60a./250v.	3	7½	7½	15	...	...	...	...	10
100a./250v.	...	...	15	...	...	...	...	...	10
200a./250v.④	...	...	15	...	...	...	...	...	..
30a./600v.	...	...	...	...	5	15	7½	20	5
60a./600v.	...	...	...	...	15	30	15	50	10
100a./600v.④	...	...	15	...	25	30	30	40	10
100 Ampere Switch									
Unfused	15	...	30	...	60	...	75	...	20
30a./250v.	1½	3	3	7½	...	...	...	...	5
60a./250v.	3	7½	7½	15	...	...	...	...	10
100a./250v.	15	15	15	30	...	...	...	...	20
200a./250v.	15	15	15	30	...	...	...	...	20
30a./600v.	...	...	...	...	5	15	7½	20	..
60a./600v.	...	...	...	...	15	30	15	50	..
100a./600v.	...	...	...	...	25	60	30	75	..
200a./600v.	...	...	...	...	25	60	30	75	..

Special Visi-Flex Switches Visi-Flex Switches With Auxiliary Switch Internally Mounted

Basic switch only. Also order no fuse kit,
fuse kit, operating handle and shaft as
required.

Ampere Rating	For Use Without Fuses	For Use With Fuses
Model A		
30	2607D63G04	2607D63G03
Spec. 60	2607D63G08	2607D63G07
60	2607D66G16	2607D66G15
100	2607D66G20	2607D66G19
Model T		
30	371D392G04	371D392G03
Spec. 60	371D392G08	371D392G07
60	657D780G14	657D780G13
100	657D780G08	657D780G07

Special Fuse Kits

For Model A and/or T switches. Order in
place of standard fuse clips.

Current Limiting, Class J®

Switch Type Rating	Fuse Kit Rating	Style Number
Model A 30 Spec. 60	30a./600v.	503C690G01
	60a./600v.	503C690G02
	100a./600v.	503C690G03
Model A 60 100	30a./600v.	503C690G15
	60a./600v.	503C690G16
	100a./600v.	503C690G17
Model T 30 Spec. 60	30a./600v.	503C690G04
	60a./600v.	503C690G05
	100a./600v.	503C690G06
Model T 60 100	30a./600v.	503C690G19
	60a./600v.	503C690G20
	100a./600v.	503C690G21
	200a./600v.	503C690G22

② Order instruction sheet 12641.

③ For panel depth of 8³/₁₆" to 9¹⁵/₁₆" a minimum of 1³/₄" must be cut from bottom of shaft.

④ Does not apply to special 60 ampere switch since these fuse clips cannot be added.

⑤ Switches with these fuse clips and Class J fuses, suitable for circuits with available faults up to 100,000 amps, 600 volts.



Guide to Replacement of Visi-Flex Switches^①

Model A, Basic Switch

Switch Type	Style Numbers in Order of Supersedure			
	Original Style	Intermediate Styles		Current Style
30 Ampere Switches				
Fusible	451D718G03	459D781G03 657D777G03	371D290G01	2607D63G01
No Fuse	.....	459D781G04 657D777G04	371D290G02	2607D63G02
Special 60 Ampere Switches				
Fusible	451D718G07	459D781G07 657D777G07	371D290G05	2607D63G05
No Fuse	.....	459D781G08 657D777G08	371D290G06	2607D63G06
60 Ampere Switches				
Fusible	451D251G03	459D782G03 657D782G03	657D782G13	2607D66G13
No Fuse	.....	459D782G04 657D782G04	657D782G14	2607D66G14
100 Ampere Switches				
Fusible	451D251G07	459D782G07 657D782G07	657D782G17	2607D66G17
No Fuse	.....	459D782G08 657D782G08	657D782G18	2607D66G18

Model T, Basic Switch

Switch Type	Style Numbers in Order of Supersedure		
	Original Style	Intermediate Style	Current Style
30 Ampere Switches			
Fusible	451D717G01	657D776G01	371D392G01
No Fuse	.....	657D776G02	371D392G02
Special 60 Ampere Switches			
Fusible	451D717G05	657D776G05	371D392G05
No Fuse	.....	657D776G06	371D392G06
60 Ampere Switches			
Fusible	451D252G01	657D780G01	657D780G11
No Fuse	.....	657D780G02	657D780G12
100 Ampere Switches			
Fusible	451D252G05	657D780G05	657D780G15
No Fuse	.....	657D780G06	657D780G16

Model A, Complete Switch

Fuse or No Fuse Kit (See Page 3)	Style Numbers of Superseded Switches			Current Style
	Original Style	Intermediate Styles		
30 Ampere Switches				
No Fuse	451D716G14	657D775G14	371D289G01	2607D89G01
30 Amp 250 Volt	451D716G15	657D775G15	371D289G02	2607D89G02
60 Amp 250 Volt	451D716G16	657D775G16	371D289G03	2607D89G03
100 Amp 250 Volt	451D716G17	657D775G17	371D289G04	2607D89G04
30 Amp 600 Volt	451D716G18	657D775G18	371D289G05	2607D89G05
60 Amp 600 Volt	451D716G19	657D775G19	371D289G06	2607D89G06
Special 60 Ampere Switches				
No Fuse	451D716G20	657D775G20	371D289G07	2607D89G07
30 Amp 250 Volt	451D716G21	657D775G21	371D289G08	2607D89G08
60 Amp 250 Volt	451D716G22	657D775G22	371D289G09	2607D89G09
100 Amp 250 Volt	451D716G23	657D775G23	371D289G10	2607D89G10
30 Amp 600 Volt	451D716G24	657D775G24	371D289G11	2607D89G11
60 Amp 600 Volt	451D716G25	657D775G25	371D289G12	2607D89G12
60 Ampere Switches				
No Fuse	451D246G19	657D781G19	374D363G01	2607D90G01
30 Amp 250 Volt	451D246G20	657D781G20	374D363G02	2607D90G02
60 Amp 250 Volt	451D246G21	657D781G21	374D363G03	2607D90G03
100 Amp 250 Volt	451D246G22	657D781G22	374D363G04	2607D90G04
200 Amp 250 Volt	451D246G23	657D781G23	374D363G05	2607D90G05
30 Amp 600 Volt	451D246G24	657D781G24	374D363G06	2607D90G06
60 Amp 600 Volt	451D246G25	657D781G25	374D363G07	2607D90G07
100 Amp 600 Volt	451D246G26	657D781G26	374D363G08	2607D90G08
100 Ampere Switches				
No Fuse	451D246G27	657D781G27	657D781G07	2607D91G07
60 Amp 250 Volt	451D246G28	657D781G28	657D781G08	2607D91G08
100 Amp 250 Volt	451D246G29	657D781G29	657D781G09	2607D91G09
200 Amp 250 Volt	451D246G30	657D781G30	657D781G10	2607D91G10
60 Amp 600 Volt	451D246G31	657D781G31	657D781G11	2607D91G11
100 Amp 600 Volt	451D246G32	657D781G32	657D781G12	2607D91G12
200 Amp 600 Volt	451D246G33	657D781G33	657D781G13	2607D91G13

Model T, Complete Switches^②

Fuse or No Fuse Kit (See Page 3)	Style Numbers in Order of Supersedure		
	Original Style	Intermediate Style	Last Mfd. Style
30 Ampere Switches			
No Fuse	451D715G14	657D774G14	371D391G01
30 Amp 250 Volt	451D715G15	657D774G15	371D391G02
60 Amp 250 Volt	451D715G16	657D774G16	371D391G03
30 Amp 600 Volt	451D715G17	657D774G17	371D391G04
60 Amp 600 Volt	451D715G18	657D774G18	371D391G05
100 Amp 250 Volt	451D715G22	657D774G22	371D391G09
Special 60 Ampere Switches			
No Fuse	451D715G19	657D774G19	371D391G06
60 Amp 250 Volt	451D715G20	657D774G20	371D391G07
60 Amp 600 Volt	451D715G21	657D774G21	371D391G08
30 Amp 250 Volt	451D715G23	657D774G23	371D391G10
30 Amp 600 Volt	451D715G24	657D774G24	371D391G11
100 Amp 250 Volt	451D715G25	657D774G25	371D391G12
60 Ampere Switches			
No Fuse	451D245G20	657D779G20	374D362G01
60 Amp 250 Volt	451D245G21	657D779G21	374D362G03
100 Amp 250 Volt	451D245G22	657D779G22	374D362G04
200 Amp 250 Volt	451D245G23	657D779G23	374D362G05
60 Amp 600 Volt	451D245G24	657D779G24	374D362G07
100 Amp 600 Volt	451D245G25	657D779G25	374D362G08
30 Amp 250 Volt	451D245G32	657D779G32	374D362G02
30 Amp 600 Volt	451D245G33	657D779G33	374D362G06
100 Ampere Switches			
No Fuse	451D245G26	657D779G26	657D779G07
100 Amp 250 Volt	451D245G27	657D779G27	657D779G08
200 Amp 250 Volt	451D245G28	657D779G28	657D779G09
100 Amp 600 Volt	451D245G30	657D779G30	657D779G10
200 Amp 600 Volt	451D245G31	657D779G31	657D779G11

① The style listed as current is physically interchangeable with all previous styles listed. Model A switches must be ordered complete with operating shaft as listed on page 4.
② Style numbers for reference only. Complete Model T switches no longer supplied. Use basic switch components for replacements.

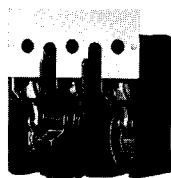


July, 1977
Supersedes Price List 29-420, pages 1-2,
dated October, 1975
Mailed to: E, D, C/1901, 1902/PL

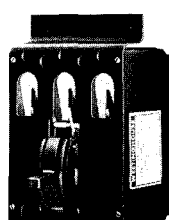
30, 60, 100 Ampere De-ion® Switches
Type DS 30, 60, 100, 200, 400, 600 Amperes

Disconnect Switches

De-ion® Switch 30, 60, 100 Amperes



30 and 60 Ampere



100 Ampere

De-ion switches are listed by the Underwriters' Laboratories through 50 hp, 600 volts Ac.

Ratings^④

Volts Ac	Maximum Hp., 3 Phase Switch		
	30 Amp	60 Amp	100 Amp ^④
125	5	7½	20
240	10	20	40
480	20	40	75
600	25	50	100
(250v Dc)	5	10	20

To select 400 and 800 ampere switches for motor applications, multiply motor full load current by 115% and select the switch with the equivalent or higher ampere rating.

Dimensions

Switch	Dimension Reference
30	D. S. 29-470, Page 3
60	D. S. 29-470, Page 3
100	D. S. 29-470, Page 3
400	D. S. 29-170, Page 16 1
800	D. S. 29-170, Page 18

Base Mounting Hardware

No additional charge for mounting hardware. Specify when required.

For General Use and With Sliding Plate Mechanisms

Style 1720 936 for 30 and 60 ampere models.

Style 1720 937 for 100 ampere model.

Style 21C6782G22 for 400 ampere models.

Style 1091 716 for 800 ampere model.

For Use with Vari-Depth Mechanisms

Style 21C6782G12 for 30 and 60 ampere models.

Style 21C6782G13 for 100 ampere model.
(400 and 800 Ampere Hardware Included with Vari-Depth Mechanism.)

Selection Data List Prices: Price List 29-020 PWE A Discount Symbol: CB-13

Ampere Rating	Copper Only ^⑤ Cable Size	Style Number	Approx. Ship Wt./Lbs.
Standard Models^⑥			
30	#14-6	371D266G02	3
60	#14-4	371D266G01	3
100	#14-1/0	657D772G02	5
200 ^⑦			
400	(2)3/0-250 MCM	179C803G33 ^⑤	24½
800	3/0 to 300 MCM (Triple Cable)	315C046G35 ^⑤	44
Long Handle Models^②			
30	#14-6	371D266G04	3½
60	#14-4	371D266G03	3½
100	#14-1/0	657D772G07	5½

Models With Auxiliary Switches: Similar to standard models, except with one external (RH side) SPDT auxiliary switch having 1-A and 1-B contacts. One inch additional mounting space required on right side of De-ion Switch for auxiliary switch.

Ampere Rating	Copper Only Cable Size	Style Number	Approx. Ship Wt./Lbs.
Standard Models With Auxiliary Switches			
30	#14-6	504C123G01	3½
60	#14-4	504C123G02	3½
100	#14-1/0	504C123G03	5½
200 ^⑦			..
Long Handle Models With Auxiliary Switches^②			
30	#14-6	504C123G06	3½
60	#14-4	504C123G05	3½
100	#14-1/0	504C123G07	5½

Accessories

Type MD Fuse Blocks

Following styles include two complete fuse blocks, plus mounting hardware. All blocks are three pole and are supplied with terminals listed for either AL or CU cable.

Catalog Number	Description	Wire Range
FBK321	30 A-250 V	#14- #2 Cu/Al
FBK361	30 A-600 V	#14- #2 Cu/Al
FBK322	60 A-250 V	#14- #2 Cu/Al
FBK362	60 A-600 V	#14- #2 Cu/Al
FBK363	100 A-250 and 600 V	#14- 1/0 Cu/Al
FBK364	200 A-250 and 600 V	#6-250 MCM Cu/Al

Fuse Clip Conversion Kits

Fit above fuse blocks; used to increase or decrease fuse rating. Includes 6 fuse clips and required spacers.

Catalog Number	Description	For Use With
FC12	30 A-250 V	30 or 60 A Fuse Block
FC16	30 A-600 V	
FC22	60 A-250 V	
FC26	60 A-600 V	
FC36	100 A-250 and 600 V	
FC46	200 A-250 and 600 V	100 A Fuse Block

^② Longer handles render these switches unsuitable for use with Vari-depth handle mechanisms.

^③ The styles supplied are non-automatic Saf-T-Vue breakers. Customer can use or remove special transparent plate, as desired (400 amp is Type LB, and 800 amp is Type MA.)

^④ Switch nameplate shows no ratings above 50 hp. However, switch design permits these maximum hp. ratings to be applied.

^⑤ Aluminum-Copper terminals are available for 400 and 800 ampere switches. Specify if needed.

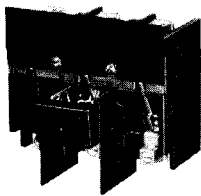
^⑥ Listed with Underwriter's Laboratories, Inc. Refer to "Electrical Construction Materials List," Miscellaneous Switches.

^⑦ See page 2 of this price list for a new, compact modern 200 ampere switch.

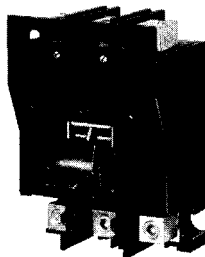
Type DS Disconnect Switches, Fusible and Non-Fusible®

Description

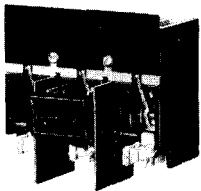
Type DS disconnect is a compact load break switch using the De-ion arc quenching principle and quick make-quick break over center toggle mechanism. It has visible contacts, is Underwriters' Laboratories, Inc. listed, and is available either as a fusible or non-fusible switch.®



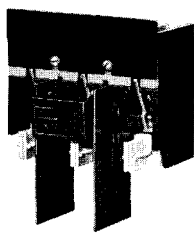
100 Amp Non-Fusible



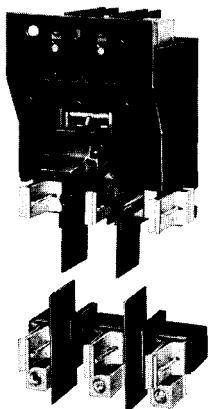
200 Amp Non-Fusible



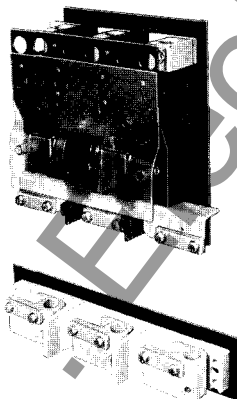
30 Amp Fusible



100 Amp Fusible



200 Amp Fusible



400 Amp Fusible

Further Information

Dimensions and Drillings: DS 29-470
Handle Mechanisms: 29-520 TWE A
List Prices: PL 29-020

I²T Testing

Type DS switches are subjected to a three part I²T test to meet maximum standards of operation: qualification of fuses for test, short circuit test and low level current test. Typical test results are shown in the following tables.

Part 1: Qualification of Fuses for Test

Fuses were tested at 101,000 amps RMS symmetrical, 19% power factor, 600 volts AC, single phase to provide the following I²T and peak current values.

Qualification Test Values®

Switch Rating Amps	I ² T x 10 ³	Peak Current Amps
30	60	11,850
60	240	21,770
100	620	32,675
200	1760	49,350
400	30400	115,200
600	30400	115,200

Part 2: Short Circuit Test

Switches of all ratings were subjected to a closing test on a circuit having available short circuit current of 50,100 Amps symmetrical-600 Volts 3 Phase-17% power factor-using appropriate fuses of the qualified type. All switches passed the test.

Part 3: Low Level Current Test

Switches of all ratings were subjected to a closing test on a circuit having available current as listed below-600 Volts 3 Phase-50% power factor. The test circuit remained closed for sufficient time to provide I²T values listed below. All switches passed the test.

Test Values

Switch Rating Amps	Available Fault Current (Amps)	I ² T x 10 ³ Av. of 3 Phases
30	3,070	3,656
60	3,070	3,656
100	3,070	3,656
200	5,020	8,390
400	10,050	58,020
600	10,050	58,020

DS Switch Application

Maximum switch-fuse application based on short circuit current withstand (symmetrical amperes).

Switch Rating Amps	Maximum Application at 240, 480 or 600 Volts AC	
	Class R Fuses	Current Limiting Fuse Class J
30	200,000	200,000
60	200,000	200,000
100	200,000	200,000
200	200,000	200,000
400	100,000⑦	200,000
600	100,000⑦	200,000

Selection Data

List Prices: Price List 29-020

Discount Symbol CB-13

Switch Rating	Fuse Amps	Clip Rating Type	Volts	Cat. No. Complete
		④		⑨ ⑩
30	No Fuse⑤	...	...	DS16U
30	30	NEC	250	DS121R
30	30	NEC	600	DS161R
30	60	NEC	250	DS122
30	60	NEC	600	DS162
60	No Fuse⑤	...	...	DS26U
60	60	NEC	250	DS222R
60	60	NEC	600	DS262R
60	100	NEC	250/600	DS263
100	No Fuse⑤	...	...	DS36U
100	100	NEC	250/600	DS363R
100③	200	NEC	250/600	DS364
200	No Fuse⑤	...	...	DS46U
200	200	NEC	250/600	DS464R
200②③	400	NEC	250/600	DS465
400	No Fuse⑤	...	...	DS56U
400	400	NEC	250/600	DS565R
600	No Fuse⑤	...	...	DS66U
600	600	NEC	250/600	DS666R

Base Mounting Hardware

Order separately when required.

No charge when ordered with switch.

30, 60, 100 Amp Non-fusible:

Style No. 624B375G17

30, 60, 100 Amp Fusible:

Style No. 624B375G17

200 Amp Non-fusible:

Style No. 624B375G07

200 Amp Fusible: Style No. 624B375G08

400 or 600 Amp Non-fusible:

Style No. 673B125G04

400 or 600 Amp Fusible:

Style No. 673B125G05

Auxiliary Switch Kits (Dis. CB-13)

Permits field mounting of an auxiliary switch for separate control circuit applications. Each switch includes three soldered, identified leads. Rated 250 volts max.

Switch Used With	Contact Arrangement	Kit Style Number
30 60 100 Amp.	1A, 1B	178C265G03
200 Amp	1A, 1B	178C619G01
200 Amp	2A's, 2B's	178C619G02

① Changed since previous issue.

② Not listed with Underwriter's Laboratories, Inc.

③ Supplied as unfused switch with separate fuse blocks.

④ 600 volt ratings are suitable for Class J fuses.

⑤ Rated 600 volts.

⑥ Switches through 200 amp are UL Listed as miscellaneous switches; 400 and 600 amp switches are UL Listed as recognized components.

⑦ 480 Volts Max.

⑧ Exceed specified values.

⑨ Switches with catalog number suffix R are UL listed for use with Class R fuses when fuse clip conversion kits listed on page 2.1 are used.

⑩ Switches with catalog number suffix R or U are CSA listed.



July, 1977
New Information
Mailed to: E, D, C/1901, 1902/PL

Type DS 30, 60, 100, 200, 400, 600
Amperes, Fusible and Non-Fusible

Disconnect Switches

Type DS Disconnect Switches, Fusible and Non-Fusible, Continued

Maximum Horsepower Ratings

Type Switch	Maximum Horsepower Ratings								250 Volts Dc
	120 Volts Ac		240 Volts Ac		480 Volts Ac		600 Volts Ac		
	Standard	Time Delay	Standard	Time Delay	Standard	Time Delay	Standard	Time Delay	
DS16U	5	...	10	....	20	.....	25	.....	7½
DS121R	1½	3	3	7½	.....	.....	.....	.....	5
DS122	3	...	7½	....	.....	.....	.....	.....	5
DS161R	....	...	....	....	5	15	7½	20	5
DS162	....	...	....	....	15	.....	15	.....	5
DS26U	10	...	20	....	40	.....	60	.....	15
DS222R	3	7½	7½	15	.....	.....	.....	.....	10
DS262R	....	...	....	....	15	30	15	50	10
DS263	....	...	15	....	25	.....	30	.....	10
DS36U	15	...	30	....	75	.....	75	.....	25
DS363R	....	...	15	30	25	60	30	75	20
DS364	....	...	25	....	50	.....	60	.....	20
DS46U	....	...	60	....	125	.....	150	.....	40
DS464R	....	...	25	60	50	125	60	150	40
DS465	....	...	50	60	100	.....	100	.....	40
DS56U	....	...	100	....	250	.....	350	.....	..
DS565R	....	...	50	100	100	250	125	350	..
DS66U	....	...	100	....	400	.....	500	.....	..
DS666R	....	...	75	100	150	400	200	500	..

Class R Fuse Clip Conversion Kits for Type DS Switches

List Prices: Price List 29-020

Discount Symbol CB-15

Switch Rating		Kit	
Amps	Volts	Catalog Number	Style Number
30	250	RFK121	2609D97G01
30	600	RFK161	2609D97G02
60	250	RFK222	2609D97G03
60	600	RFK262	2609D97G04
100	250/600	RFK464	750B249G01
200	250/600	RFK464	750B249G01
400	250/600	RFK666	750B427G01
600	250/600	RFK666	750B427G01

Terminal Data

Terminals are suitable for either copper or aluminum cable.

Switch Rating	Wire Range	
	Copper	Aluminum
30	#14-#2	#12-#2
60	#14-#2	#12-#2
100	#14-0	#12-0
200	#4-300 MCM	#4-300 MCM
400	(1) #4-600 MCM or (2) 1/0-3/0	(1) #4-600 MCM or (2) 1/0-250 MCM
600	Same as 400A except two terminals per pole	

